DISSERTATION ON

CURRENT CLINICAL PROFILE OF RESPIRATORY DISEASES IN GERIATRIC POPULATION

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BONAFIDE CERTIFICATE

Certified that this dissertation is the bonafide work of **Dr.P.ARULKUMARAN** on "**CURRENT CLINICAL PROFILE OF RESPIRATORY DISEASES IN GERIATRIC POPULATION**" during his **MD(PULMONARY MEDICINE)** course from April 2009 to April 2012 at the INSTITUTE OF THORACIC MEDICINE AND RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL– MADRAS MEDICAL COLLEGE, CHENNAI.

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DECLARATION BY THE SCHOLAR

I hereby declare that the dissertation entitled "**CURRENT CLINICAL PROFILE OF RESPIRATORY DISEASES IN GERIATRIC POPULATION"** submitted for the Degree of Doctor of Medicine in M.D., Degree Examination Branch XVII PULMONARY MEDICINE is my original work and the dissertation has not formed the basis for the award of any degree, diploma, associateship, fellowship or similar other titles. It had not been submitted to any other university or institution for the award of any degree or diploma.

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CONTENTS

INTRODUCTION

INTRODUCTION

With increasing life expectancy geriatric population (people aged 65 and above) contribute to significant percentage of the World population.

India is in a phase of demographic transition. As per the 2001 census, the population of the elderly in India was 49 million as compared with 20 million in 1951. It has been projected that by the year 2050, the number of elderly people would rise to about 324 million. Current life expectancy is 62.3years for males and 65.3years for females.

They also contribute to significant percentage of respiratory diseases. Aging has been shown to be associated with gradual decline in many aspects of pulmonary functions, waning of immunity and the immunological mechanisms show a declining efficiency as the antibodies form much less rapidly in old age than in younger adulthood.

This study is to find the current spectrum of respiratory diseases in geriatric population in a tertiary care centre.

AIM

AIM

To study the current profile of Respiratory diseases in Geriatric Population attending a tertiary care centre

REVIEW OF LITERATURE

REVIEW OF THE LITERATURE

The primary search engines used were, pubmed, google scholar, hand searching of articles and standard textbook references.

COPD IN GERIATRIC PATIENTS

Some researches are of the view that COPD may be a disease of accelerated aging process. Lee et al in CurrOpinPulm Med. 2011 Mar;17(2):90-7(1), substantiates this. He says accelerated aging due to exposure to cigarette smoke is hypothesized to induce rapid progression of COPD. Recent studies have shown that COPD patients have enhanced expression of senescence-associated proteins in the lung and in the peripheral circulation compared to healthy controls. Murine models of accelerated aging demonstrate spontaneous emphysematous changes in the lungs, while lungs of COPD patients demonstrate enhanced markers of senescence in fibroblasts and alveolar cells. More recently, studies of telomeres, which shorten with cellular aging, have shown that COPD patients may experience accelerated telomere attrition compared with healthy controls. However, studies to date have been relatively small and have produced heterogeneous results. In chronic respir dis 2011;8(2) :143-51,Jarad N(2) describes the out come of COPD patients in geriatic patients.He says " Features of importance to old age

include increased prevalence of COPD in non-smokers and rise in the rate of systemic co morbidities. In addition, acute exacerbations in older patients have poorer outcome, manifesting by increase in the rate of hospitalisation, greater length of stay, increase of the rate of re-hospitalisation and in mortality rate. Impaired cognitive functions as well as problems affecting hand joints make using inhaled medications less reliable which leads to further deterioration of outcome of care. Even for those who are competent in using inhalers, the evidence for their efficacy in older patients is not certain". So while treating geriatric patients with COPD all these factors should be kept in mind. The role of rehabilitation in Geriatric patients has also been extensively dealt with. "Comprehensive peri operative rehabilitation appears to be effective in high-risk patients with severe COPD who need surgery for abdominal cancer" Disabil Rehabil. 2012;34(2):174-7(3).

COMMUNITY ACQUIRED PNEUMONIA IN THE ELDERLY

It is of common knowledge that age plays a very important part in the outcome of patients with CAP.But it is not the age alone which plays a part but the associated co morbid conditions, associated with aging,which also plays a role in the outcome.Sliql et al, CurrOpin Infect Dis. 2011 Apr;24(2):142-7(7), opines that ," Poorer outcomes in the elderly with CAP have been related to severity of disease, co morbid

disease burden, functional status, and frailty, but not to age alone". CAP presents differently in the adult and the elderly. One cannot expect the same typical symptoms in the elderly. Akhee S et al, South Med J. 1997 Mar; 90 (3):296-8(8), has compared mortality with the absence of fever and leucocytosis. Elderly patients with community-acquired pneumonia may not have a systemic inflammatory response characterized by fever and leukocytosis. They compared lack of fever and leukocytosis with mortality in elderly patients with community-acquired pneumonia. Patients with fever and leukocytosis were compared with those without fever and leukocytosis. Comparison of the two groups by unpaired, two-tailed t test showed that lack of fever and leukocytosis correlated with mortality. Hospitalized elderly patients who have community-acquired pneumonia without fever and leukocytosis are seven times more likely to die than those who have these symptoms. Finally he concludes by saying that the addition of immune modulators like Granulocyte colony stimulating factors should be considered in this group of patients.

Investigators have also paid attention to the causative organisms, clinical characteristics, and outcomes. Fernández-Sabé N et al in Medicine (Baltimore). 2003 May; 82(3):159-69(9)he has documented his results like this, "We performed an observational analysis of prospectively collected data on 1,474 adult patients who were

hospitalized for community-acquired pneumonia; 1,169 patients were under 80 years of age and 305 (21%) patients were over 80 years ("very elderly"). Mean patient ages were 60 years in the former group and 85 years in the latter group. Severely immune suppressed patients and nursing-home residents were not included. Co morbidities significantly associated with older age were chronic obstructive pulmonary disease, chronic heart disease, and dementia. The most common causative organism was Streptococcus pneumoniae (23% in both groups). Aspiration pneumonia was more frequent in the very elderly (5% in younger patients versus 10% in the very elderly); Legionella pneumophila (8% in younger patients versus 1% in the very elderly) and atypical agents (7% in younger patients versus 1% in the very elderly) were rarely recorded in the very elderly. While very elderly patients complained less frequently of pleuritic chest pain, headache, and myalgia, they were more likely to have absence of fever and altered mental status on admission. No significant differences were observed between groups as regards incidence of classic bacterial pneumonia syndrome (60% versus 59%) in 343 patients with pneumococcal pneumonia. The development of complications (26% in younger versus 32% in very elderly patients) as well as early mortality (2% in younger versus 7% in very elderly patients) and overall mortality (6% in younger versus 15% very elderly patients) were significantly higher in very

elderly patients. Acute respiratory failure and shock/multi organ failure were the most frequent causes of death, especially of early mortality. Factors independently associated with 30-day mortality in the very elderly were altered mental status on admission (odds ratio, 3.69), shock (odds ratio, 10.69), respiratory failure (odds ratio, 3.50), renal insufficiency (odds ratio, 5.83), and Gram-negative pneumonia (odds ratio, 20.27).”One important concern about this study is patients in the very elderly age group and nursing home residents have not been included. This problem has in part been solved by Australian researchers Chong et al where they have compared nursing home acquired and community acquired pneumonia in the elderly age group.Although there were no significant differences in CRP, WBC, and body temperature at admission and duration of hospitalization, the degree of independency of the nursing home group was significantly lower than the community group. As the degree of independency became worse, the length of hospitalization extended and mortality increased. Bacteriological findings of sputum culture showed that methicillin-resistant Staphylococcus aureus (MRSA) was cultured in 20 cases (19%) of the nursing home group and 18 cases (13%) of the community group. In isolated analysis of total care cases, MRSA positive rates were similar in the nursing home group (17/58; 29%) and the community group (8/30; 27%). Only 1 case with penicillin-susceptible Streptococcus

pneumoniae (PSSP) was found in the nursing home group, however 7 species of PSSP were cultured in the community group, including 5 self-help cases. Pseudomonas aeruginosa was cultured in 8 patients of each group, and most of them were total care cases. We concluded that the difference in frequency and species of bacteria depended on the condition of patients, rather than the environment, and differences in conditions might lead to differences in clinical features.

SLEEP APNOEA

The prevalence of sleep apnoea among the elderly group is increasing. The adverse outcome associated with sleep apnoea is also increasing. This has been dealt by Iyer SR in J Assoc Physicians India.,2010 Jul; 58: 442-6(10). Stroke is a serious health problem and is chiefly a disorder of the elderly population. Several modifiable and non-modifiable risk factors have been studied. The association of sleep disorders and stroke is exciting. Obstructive sleep apnoea (OSA) which is now considered a systemic disease significantly increases the risk of stroke and death from any cause and the increase is independent of other risk factors including hypertension. There is high prevalence of OSA in the elderly. OSA affects the cerebral hemodynamics adversely. There appears to be a bi-directional relation between sleep disordered breathing (SDB) and cerebrovascular accidents. Strokes can themselves

generate SDB. The presence of OSA in stroke patients is associated with poor outcome. Cyclical hypoxia and sympathetic stimulation has deleterious effects on cardiovascular, cerebro vascular and metabolic functions. The effects are particularly important in existing ischemic brain injury. Use of continuous positive airway pressure in OSA patients is rewarding. One important conclusion has been made at the end of the study. The use of naso gastric tube in the management of these patients results in the narrowing if the pharynx which already has been compromised in sleep apnoea patients.

DIFFUSE PARENCHYMAL LUNG DISEASE

Aging is associated with increased susceptibility to a variety of chronic diseases, including type 2 diabetes mellitus, cancer, and neurological diseases. Lung pathologies are not the exception, and the prevalence of several interstitial lung diseases (ILDs), primarily idiopathic pulmonary fibrosis, has been found to increase considerably with age. Immunosenescence, oxidative stress, abnormal shortening of telomeres, apoptosis, and epigenetic changes affecting gene expression have been proposed to contribute to the aging process, and aging-associated diseases. SeminRespirCrit Care Med 2010; 31(5): 607-617.Moise Sain et al(11).

RESPIRATORY TRACT INFECTIONS IN GERIATRIC POPULATION

Infections, particularly respiratory tract infections, are common in elderly individuals, resulting in decreased daily activity, prolonged recovery times, increased health care service use, and more frequent complications, including death.

UPPER RESPIRATORY TRACT INFECTION

The International Classification of health problems in primary health care defines “upper respiratory tract infections” as acute inflammation of nasal or pharyngeal mucosa in the absence of other specifically defined respiratory infection. It consist of nasopharyngitis (common cold),sinusitis, pharyngitis, otitis media, laryngitis and acute bronchitis.

ACUTE BRONCHITIS

Diagnostic Criteria

Atleast 2 of the following signs and symptoms had to be present to meet the criteria of acute bronchitis: increased frequency and severity of cough, new or increased sputum production, burning substernal chest

discomfort with coughing or deep inspiration, and fever (temperature ≥38˚C). Radiologic evidence of pneumonia excluded this diagnosis(4).

PNEUMONIA

Pneumonia is defined as inflammation and consolidation of lung tissue due to an infectious agent and characterised by radiographic infiltrate. Pneumonia can be classified as follows:

- Community acquired pneumonia
- Nosocomial pneumonia
    - Hospital acquired pneumonia
    - Health care associated pneumonia
    - Ventilator associated pneumonia

COMMUNITY ACQUIRED PNEUMONIA

In older patients apart from organisms encountered in younger people such as H.influenza, Moraxella catarrhalis, aerobic gram negative bacillus, Enterobacter, E.coli, Serratia marcescens, Klebsiella , Proteus, Pseudomonas and Acinetobacter. They are usually associated with pre-existing respiratory illness such as COPD.

HOSPITAL ACQUIRED PNEUMONIA(HAP)

Pneumonia that is neither present nor incubating at the time of admission and occurring after 48 hours of admission.

VENTILATOR ASSOCIATED PNEUMONIA

- Complicates Intubation Process
- Early onset - occurring in 48-72hrs
- Late onset- occurring after 72hrs

HEALTH CARE ASSSOCIATED PNEUMONIA

- Patients with pneumonia developing in 2 to 90 days of hospitalization
- Resident of nursing home
- Recent exposure to hemodialysis, I.V antibiotics chemotherapy, wound care
- May be residing in a community but infected with organism similar to HAP.

PULMONARY TUBERCULOSIS IN GERIATRIC POPULATION

Pulmonary tuberculosis is a chronic infectious disease of the lung caused by Mycobacterium tuberculosis.

In old people tuberculosis can be either due to exogenous reinfection or endogenous reactivation. In this age group there is an increased risk of tuberculosis infection due to natural aging process of the immune system. Several factors apart from aging contribute to decline in immunity. These are underweight, malnutrition, cancer, diabetes mellitus, gastrointestinal surgery, immunosuppressive treatment like corticosteroids, smoking and HIV.

CLINICAL FEATURES

Elderly subjects with TB may present with systemic manifestations of TB and a paucity of respiratory symptoms is observed in the elderly(12,13).As compared to young adults clinical presentation of TB in elderly may be atypical with more of constitutional symptoms (12,13).

DIAGNOSIS

Microscopy of a sputum smear prepared by Ziel Neelson method detecting the acid fast bacilli. Chest radiograph or CT chest showing features suggestive of active tuberculosis.

PULMONARY TUBERCULOSIS SEQUELAE

Sequela of tuberculosis (TB sequela) is defined as the state with various secondary complications after healing of TB, such as chronic respiratory failure (CRF), corpulmonale or chronic pulmonary inflammation. Pathophysiology of TB sequelae is consisted of disturbed pulmonary function, chronic respiratory failure, sleep disorder and pulmonary hypertension. In addition, secondary pulmonary infection with mycosis or nontuberculous mycobacteriosis (NTM) is difficult to be controlled(14,15).

In a narrow sense, the sequelae is a pathological status that is caused by many patho-anatomical changes in the healing process of pulmonary tuberculosis and need clinical treatment for many symptoms. The pulmonary tuberculosis sequelae include secondary infection such as aspergillosis, atypical mycobacteriosis and bacterial airway infection. In a broad sense, the sequelae also represent a pathological status with many symptoms after treatment that is caused by injuries in various organs with tuberculosis(14,15).

PT sequelae consist of repeated bacterial infection of lower respiratory tract, pulmonary aspergilloma, atypical mycobacteriosis and chronic respiratory failure.

COPD IN GERIATRIC POPULATION

DEFINITION

Chronic Obstructive Pulmonary Disease (COPD) is a preventable and treatable disease with some significant extrapulmonary effects that may contribute to the severity in individual patients. Its pulmonary component is characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lung to noxious particles or gases.

The chronic airflow limitation characteristic of COPD is caused by a mixture of small airway disease (obstructive bronchiolitis) and parenchymal destruction (emphysema), the relative contributions of which vary from person to person.

CLINICAL FEATURES

Characterized by chronic cough , sputum production and breathlessness.

DIAGNOSTIC CRITERIA

Post bronchodilator FEV1 /FVC<0.70 or FVC less than 0.8.

AECOPD DEFINITION

An exacerbation of COPD is defined as an event in the natural course of the disease characterised by a change in the patients base line dyspnoea , cough and / or sputum that is beyond normal day to day variation, is acute in onset, and may warrant a change in regular medication in patient with under lying COPD.

BRONCHIAL ASTHMA IN ELDERLY

DEFINITION

Bronchial asthma is defined as a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role .The chronic inflammation is associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing particularly at night or in the early morning. These episodes are usually associated with widespread, but variable, airflow obstruction within the lung that is often reversible either spontaneously or with treatment.

CLINICAL DIAGNOSIS

Clinical diagnosis of asthma is often prompted by symptoms such as episodic breathlessness, wheezing, cough, and chest tightness.

Episodic symptoms after an incidental allergen exposure, seasonal variability of symptoms and a positive family history of asthma and atopic disease are also helpful diagnostic guides.

CRITERIA FOR DIAGNOSIS

- Clinical features suggestive of bronchial asthma.
- SPIROMETRY-A diagnosis of asthma was made according to the ATS criteria depending on the degree of reversibility of FEV1 which is generally accepted as ≥ 12% and ≥ 200 ml from the pre bronchodilator value.

ACUTE EXACERBATION

Transient worsening of asthma may occur as a result of exposure to risk factors for asthma symptoms, or triggers, such as exercise, air pollutants, and even certain weather conditions(e.g., thunderstorms). More prolonged worsening is usually due to viral infections of the upper respiratory tract(particularly rhinovirus and respiratory syncytial virus) or allergen exposure which increases inflammation in the lower airways (acute or chronic inflammation) that may persist for several days or weeks.

BRONCHIECTASIS

DEFINITION

Bronchiectasis is a morphologic term used to describe the abnormal irreversibly dilated and often thick walled bronchi. Bronchiectasis represents the end stage of a variety of pathological processes that cause destruction of the bronchial wall and its surrounding supporting tissues. The clinical manifestations include chronic cough and copious mucopurulent expectoration, often lasting months to years. Bronchiectasis shares many features with chronic bronchitis , including inflamed and easily collapsible airways, airflow obstruction on spirometry , and frequent exacerbations.

CLINICAL FEATURES

The classical clinical manifestations of bronchiectasis are daily cough and mucopurulent sputum production. Cough is invariably present and is often the only symptom for years. Purulent , tenacious sputum production often intermittent , frequently worse in the morning is present in most patients. Dry bronchiectasis is occasionally seen. Hemoptysis may be seen in 40 to 70% of the patients and may vary from blood streaks to large clots. Increasing cough, dyspnea , volume of

sputum production, fever, hemoptysis, and chest pain are hallmarks of exacerbations.

Chest auscultations reveal findings of early and mid-inspiratory crackles as well as diffuse rhonchi and prolonged expiration. Bronchial breath sounds may be heard in severe cases or in patient with complicating pneumonia. In severe advanced cases, there may be evidence of respiratory insufficiency and corpulmonale.

CLASSIFICATION USING RADIOLOGY

Bronchiectasis may be classified by pathological features , and radiographic appearance as follows.

- Cylindrical bronchiectasis
- Varicose bronchiectasis
- Saccular (cystic bronchiectasis)

Diagnostic criteria

HRCT is the imaging modality of choice to establish the presence of bronchiectasis and to determine its precise extent. The characteristic findings are.

- An internal bronchial diameter greater than that of the adjacent pulmonary artery.
- Lack of bronchial tapering, defined as a bronchus that has the same diameter as its parent branch for a distance of more than 2cm.
- Visualization of bronchi within 1cm of the costal pleura.
- Visualization of bronchi abutting the mediastinal pleura
- Bronchial wall thickening.

LUNG CANCER IN GERIATRIC POPULATION

Lung cancer is the phenotypic consequence of an accumulation of genetic changes in airway epithelial cells that result in unrestrained cellular proliferation. They are basically classified as Non-small cell carcinoma and Small cell carcinoma.

WHO Classification of Malignant epithelial Non-small cell Lung Tumors

- Squamous cell carcinoma
- Adenocarcinoma
- Adenosquamous carcinoma
- Large cell carcinoma

- Sarcomatoid carcinoma
- Carcinoid tumour
- Salivary gland tumors

ADENOCARCINOMA

Adenocarcinoma of the lung is a form of non-small cell lung cancer. Eighty percent of lung cancers are non-small cell cancers, and of these, about 50% are adenocarcinomas. Adenocarcinoma of the lung begins in the outer parts of the lung, and it can be present for a long time before it is diagnosed. It is the type of lung cancer most commonly seen in women and is often seen in non-smokers. The most common type of lung cancer in lifelong non-smokers is the adenocarcinoma. This cancer usually is seen peripherally in the lungs, as opposed to small cell lung cancer and squamous cell lung cancer, which both tend to be more centrally located. The adenocarcinoma has an increased incidence in smokers, but is also the most common type of lung cancer seen in non-smokers.

Adenocarcinoma of the lung tends to stain mucin positive as it is derived from the mucus producing glands of the lungs. Similar to other adenocarcinoma, if the tumor is well differentiated (low grading) it will resemble the normal glandular structure. Poorly differentiated

adenocarcinoma will not resemble the normal glands (high grade) and will be detected by seeing that they stain positive for mucin(which the glands produce).

SQUAMOUS CELL CARCINOMA

Squamous cell lung cancer is a form of Non-small cell lung cancer. Squamous cell lung cancers usually begin in the bronchial tubes (large airways) in the central part of the lungs.

Squamous cell carcinoma cells are large, flattened and stratified with a high cytoplasm to nucleus ratio. Key diagnostic features include the presence of intracytoplasmic keratin which may be linked to the presence of intercellular bridges and squamous pearl formation. Most squamous cell carcinomas arise centrally within the main, lobar, segmental or sub segmental bronchi but some occur more peripherally. The tumour mass generally extends into the lumen of the airway with invasion into the underlying wall.

SMALL CELL LUNG CARCINOMA

Small cell lung cancer (SCLC) is a tumour of extremes. Untreated, it is one of the most highly virulent malignancies known, with a life expectancy best measured in days to weeks. On the other

hand, it displays exquisite chemo sensitivity, resulting in partial or complete responses in vast majority of cases. Unfortunately, although many patients can be rendered free of clinical evidence of disease, most quickly relapse and die from this malignancy.

Like all other lung cancers, SCLC is linked to a variety of environmental risk factors. By far the strongest association is with the use of tobacco: Up to 98% of SCLC patients have a history of smoking. Occupational risks for SCLC include exposure to bischloromethyl ethers, nickel, vinyl chloride, asbestos, cadmium, and radon daughters (in uranium miners). Other types of radiation exposure also appear to be significant risk factors, with an increased incidence of SCLC in atomic bomb survivors and patients.

DIFFUSE PULMONARY LUNG DISEASE IN GERIATRIC POPULATION

Advancing age is associated with increased risk for some forms of interstitial lung disease (ILD), and this risk is especially reflected by the considerably increased incidence of idiopathic pulmonary fibrosis (IPF) in the elderly. Although the causes of this increased risk are not well-defined, both ageing and IPF have been associated with shortening of telomeres due to telomerase deficiency. Thoracic imaging with high-

resolution computed tomographic (HRCT) scanning plays a key role in the diagnosis of ILD in the elderly, and a characteristic appearance of the lung parenchymal changes on HRCT may provide a confident diagnosis and obviate the need for invasive testing such as surgical lung biopsy. An effective treatment for IPF remains elusive, but many patients will benefit from supportive care and treatment of various co-morbid conditions that are often found in patients with IPF(29).

PNEUMOCONIOSIS IN GERIATRIC POPULATION

DEFINITION

The accumulation of dust in the lungs and tissue reactions to its presence. Commonest pneumoconiosis includes

- Silicosis
- Coal worker pneumoconiosis
- Asbestosis
- Beryliosis

SILICOSIS

Silicosis is fibrotic disease of the lungs caused by the inhalation, retention, and pulmonary reaction to crystalline silica. There are three forms of silicosis.

- Acute silicosis
- Accelerated silicosis
- Chronic silicosis

CHRONIC SILICOSIS

Chronic silicosis occurs after a latency of 15years. Radiological features includes multiple nodules that are bilateral, located in upper lung zones, and associated with basilar emphysema. Hilar or mediastinal lymph nodes may show egg shell calcification.

PROGRESSIVE MASSIVE FIBROSIS

Progressive massive fibrosis(PMF), also called complicated silicosis and conglomerate silicosis, is defined as nodules> 1cm in diameter. CT is confirmatory demonstrating a peripheral zone of paracicatricial emphysema, rounded or ovoid mases of PMF. The outer margin of PMF often parallels the contour of chest wall. Large lesions often show irregular low attenuation regions indicative of avascular necrosis, and cavitation may occur.

PLEURAL DISEASES IN ELDERLY

Pleural diseases in geriatric population consist of pleural effusion, primary and secondary malignancy, pneumothorax. Pleural effusion can be classified as exudative and transudative. Exudative Pleural efffusion in the elderly includes infections, primary and secondary malignancy and chylothorax.

TUBERCULOUS PLEURAL EFFUSION

When a tuberculous pleural effusion occurs in the absence of radiologically apparent TB, it may be the sequel to a primary infection 6 to 12 weeks previously or it may represent reactivation TB (32). In industrialized countries, more pleural effusions may be due to reactivation than are due to post primary infection (32). However, in a recent study from San Francisco, pleural TB cases were approximately two times more likely to be clustered than were pulmonary TB and three times more likely to be clustered than non respiratory TB cases(32).

The tuberculous pleural effusion is thought to result from rupture of a sub pleural caseous focus in the lung into pleural space (33). Supporting evidence comes from the operative findings of Stead et al (34), who reported that they could demonstrate a caseous tuberculous

focus in the lung contiguous with the diseased pleura in 12 to 15 patients with tuberculous pleuritis. The remaining three patients in this series were found to have parenchymal TB, although these patients did not have caseous foci adjacent to the pleura.

It appears that delayed hypersensitivity plays a large role in the pathogenesis of tuberculous pleural effusion. The hypersensitivity reaction is initiated when tuberculous protein gains access to the pleural space.

It is probable that delayed hypersensitivity also plays a large role in the development of tuberculous pleural effusions in humans. The mycobacterial cultures of the pleural fluid from most patients with tuberculous pleural effusions are negative (35,36).

Although delayed hypersensitivity to tuberculous protein is probably responsible for most clinical manifestations of tuberculous pleuritis, many patients when first evaluated have a negative PPD skin test. The explanation for this paradox may be a combination of two factors. First, in some (37), but not in all (38) patients with tuberculous pleuritis, a circulating mononuclear adherent cell suppresses the specifically sensitized circulating T lymphocytes in the peripheral blood. Second, there may be a sequestration of PPD-reactive T lymphocytes in

the pleural space involving both Leu-2(suppressor/cytotoxic) and Leu-3(helper) positive T cells (38).

MALIGNANT PLEURAL EFFUSION

Carcinomas of the lung and breast and lymphomas account for approximately 75% of malignant pleural effusions. Lung cancer is the leading cause of malignant pleural effusion (40). When patients with lung cancer are first evaluated, approximately 15% have a pleural effusion (41).

MATERIALS AND METHODS

MATERIALS AND METHODS

STUDY DESIGN

This is Prospective (Observational) study designed to find the current profile of respiratory diseases in Geriatric population.

STUDY CENTER:

- Institute of Thoracic Medicine, Chetpet.
- Department of Thoracic Medicine, Government Rajiv Gandhi General Hospital, Madras Medical College, Chennai-3.

STUDY DURATION

February 2011 to October 2011

INCLUSION CRITERIA

Consenting patients with age 65 years or more with Respiratory Symptoms.

EXCLUSION CRITERIA

- Patients with age less than 65.
- Patients not giving consent.

STUDY PROCEDURE

Geriatric patients, those consenting, with respiratory complaints attending Institute of Thoracic Medicine, chetpet and Department of Thoracic Medicine, Rajiv Gandhi Government General Hospital, Chennai, were taken up for study.

In this study 1234 patients were studied in which males were 773 and females were 461. 394 patient required inpatient care. 890 patients belong to the age group 65-74years and 344 in 75+years age group.

Routine investigations such as chest skiagram, sputum NT C/S, sputum gram stain, sputum AFB and spirometry were done.

Those patient requiring inpatient care were admitted in the Thoracic Medicine ward, Rajiv Gandhi Government General Hospital. Apart from above mentioned investigation they were subjected to further investigation, as per need, such a Renal function test, Liver function test, blood culture, ECG, ECHO, CT CHEST, Bronchoscopy, thoracocentesis, pleural biopsy and CT guided biopsy.

RESULTS

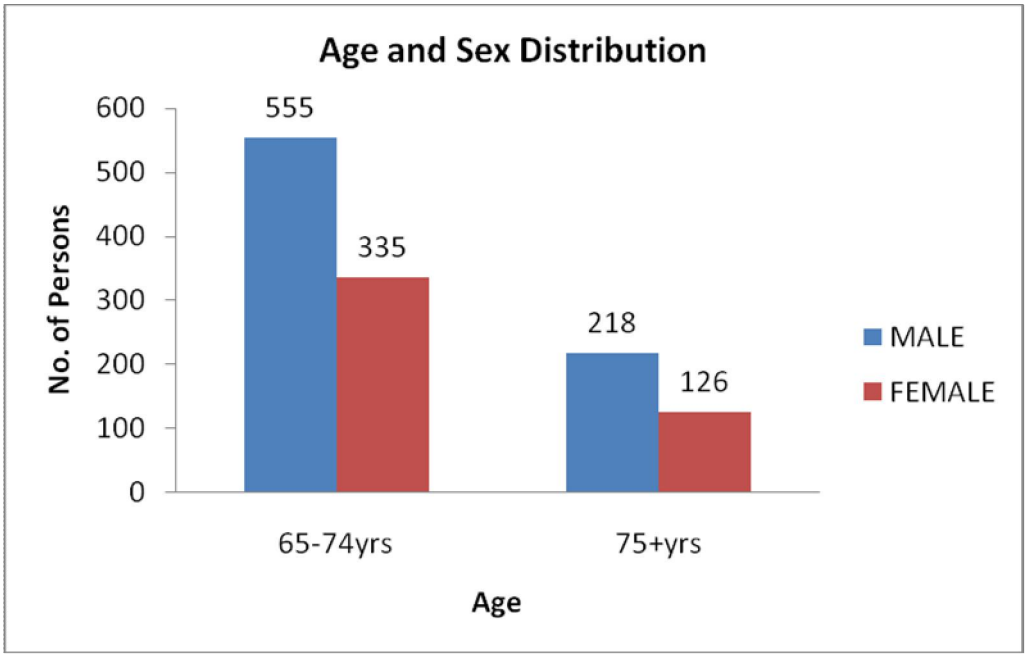
RESULTS

In this study 1234 patients were studied in which males were 773 and females were 461. 394 patient required inpatient care. 890 patients belong to the age group 65-74years and 344 in 75+years age group. Respiratory morbidity profile of these patients are as follows.

DEMOGRAPHY

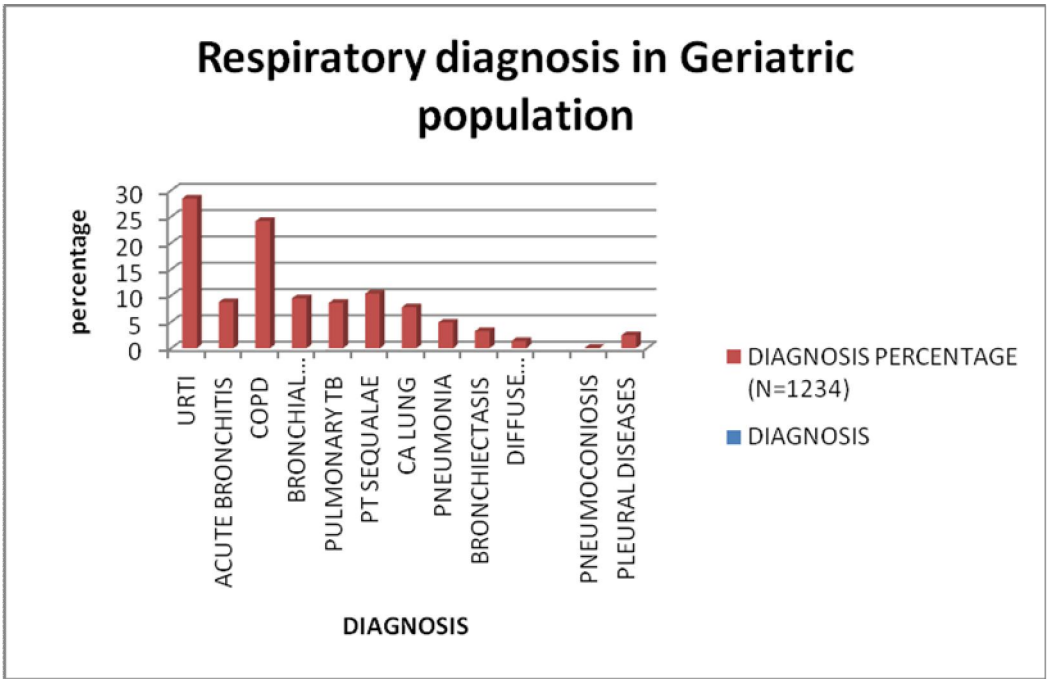
AGE AND SEX DISTRIBUTION

	65-74yrs	75+yrs
MALE	555	218
FEMALE	335	126



RESPIRATORY DIAGNOSIS

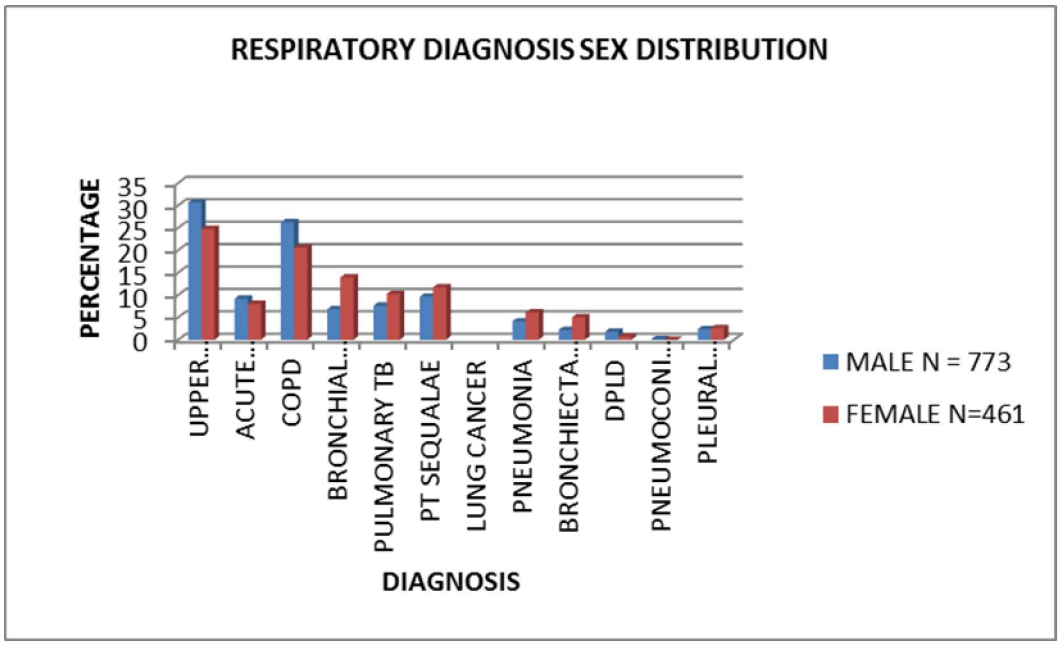
DIAGNOSIS	TOTAL	PERCENTAGE (N=1234)
UPPER RESPIRATORY TRACT INFECTION	351	28.44
ACUTE BRONCHITIS	108	8.75
CHRONIC OBSTRUCTIVE PULMONARY DISEASE	298	24.14
BRONCHIAL ASTHMA	117	9.48
PULMONARY TUBERCULOSIS	106	8.58
PIULMONARY TUBECULOSIS SEQUALAE	128	10.37
CARCINOMA LUNG	96	7.78
PNEUMONIA	60	4.86
BRONCHIECTASIS	40	3.24
DIFFUSE PARENCHYMAL LUNG DISEASE	17	1.37
PNEUMOCONIOSIS	1	0.08
PLEURAL DISEASES	30	2.43



RESPIRATORY DIAGNOSIS

SEX DISTRIBUTION

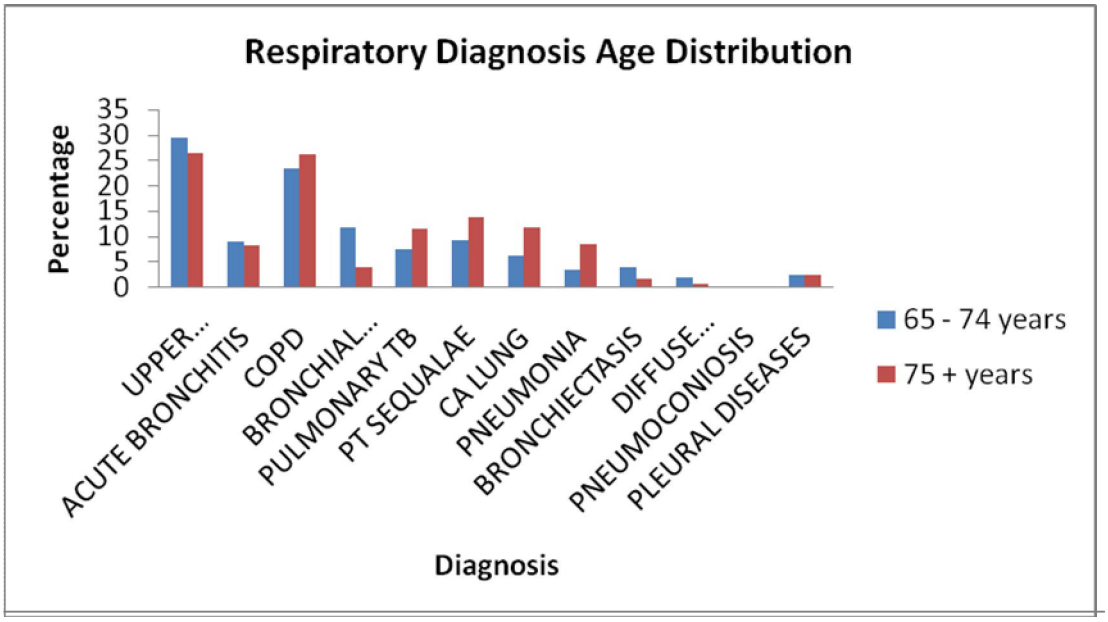
DIAGNOSIS	MALE (N = 773) %	FEMALE (N=461) %
UPPER RESPIRATORY TRACT INFECTION	30.66	24.73
ACUTE BRONCHITIS	9.18	8.02
COPD	26.2	20.6
BRONCHIAL ASTHMA	6.8	13.9
PULMONARY TUBERCULOSIS	7.6	10.2
PULMONARY TUBERCULOSIS SEQUALAE	9.6	11.7
LUNG CANCER	8.79	6.03
PNEUMONIA	4.1	6.07
BRONCHIECTASIS	2.2	4.99
DIFFUSE PARENCHYMAL LUNG DISEASE	1.8	0.65
PNEUMOCONIOSIS	0.12	0
PLEURAL DISEASES	2.32	2.6



RESPIRATORY DIAGNOSIS

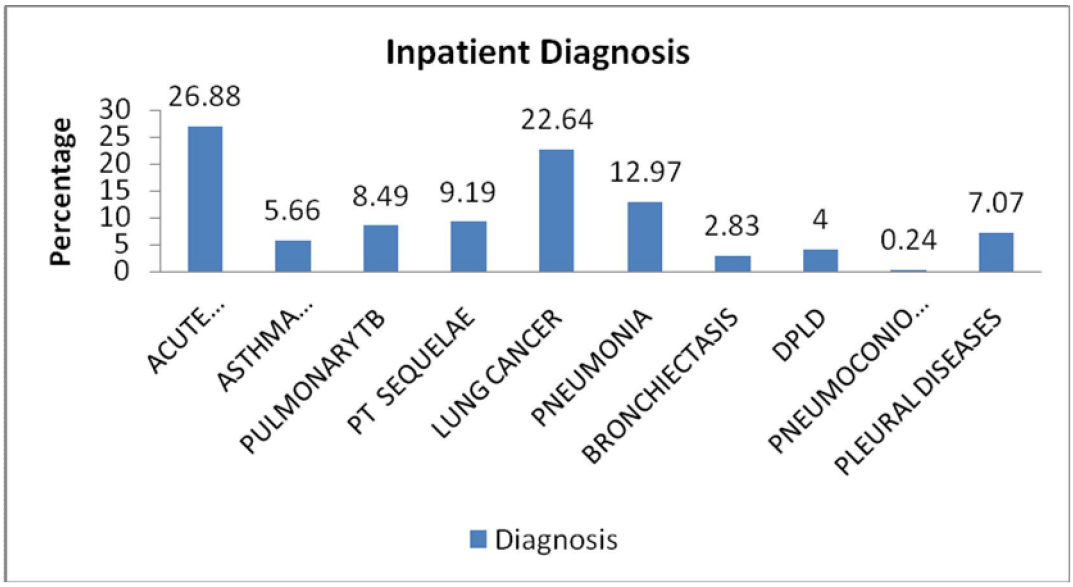
AGE DISTRIBUTION

DIAGNOSIS	65-74 yrs (N=890) %	75+ yrs (N=344) %
UPPER RESPIRATORY TRACT INFECTION	29.32	26.32
ACUTE BRONCHITIS	8.98	8.13
COPD	23.3	26.16
BRONCHIAL ASTHMA	11.68	3.77
PULMONARY TUBERCULOSIS	7.52	11.33
PULMONARY TUBERCULOSIS SEQUALAE	9.1	13.66
CA LUNG	6.29	11.62
PNEUMONIA	3.48	8.43
BRONCHIECTASIS	3.93	1.45
DIFFUSE PARENCHYMAL LUNG DISEASE	1.79	0.58
PNEUMOCONIOSIS	0.11	0
PLEURAL DISEASES	2.47	2.32



INPATIENT DIAGNOSIS

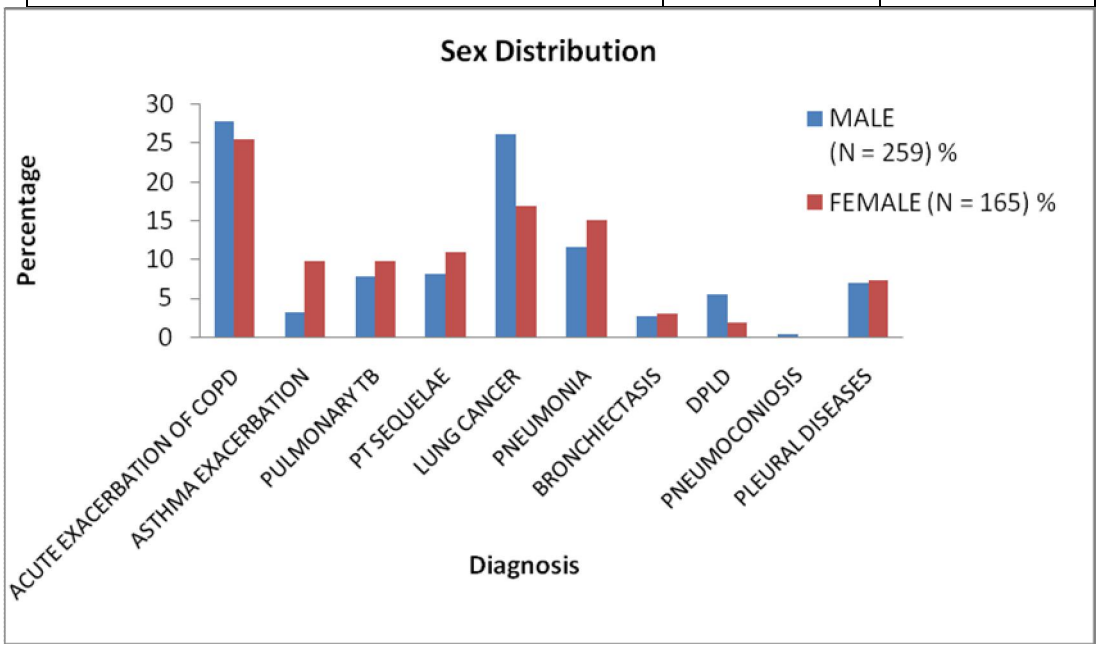
DIAGNOSIS	TOTAL	PERCENTAGE (N=424)
ACUTE EXACERBATION OF COPD	114	26.88
ASTHMA EXACERBATION	24	5.66
PULMONARY TUBERCULOSIS	36	8.49
PULMONARY TUBERCULOSIS SEQUELAE	39	9.19
LUNG CANCER	96	22.64
PNEUMONIA	55	12.97
BRONCHIECTASIS	12	2.83
DIFFUSE PARENCHYMAL LUNG DISEASE	17	4.00
PNEUMOCONIOSIS	1	0.24
PLEURAL DISEASES	30	7.07



INPATIENT DIAGNOSIS

SEX DISTRIBUTION

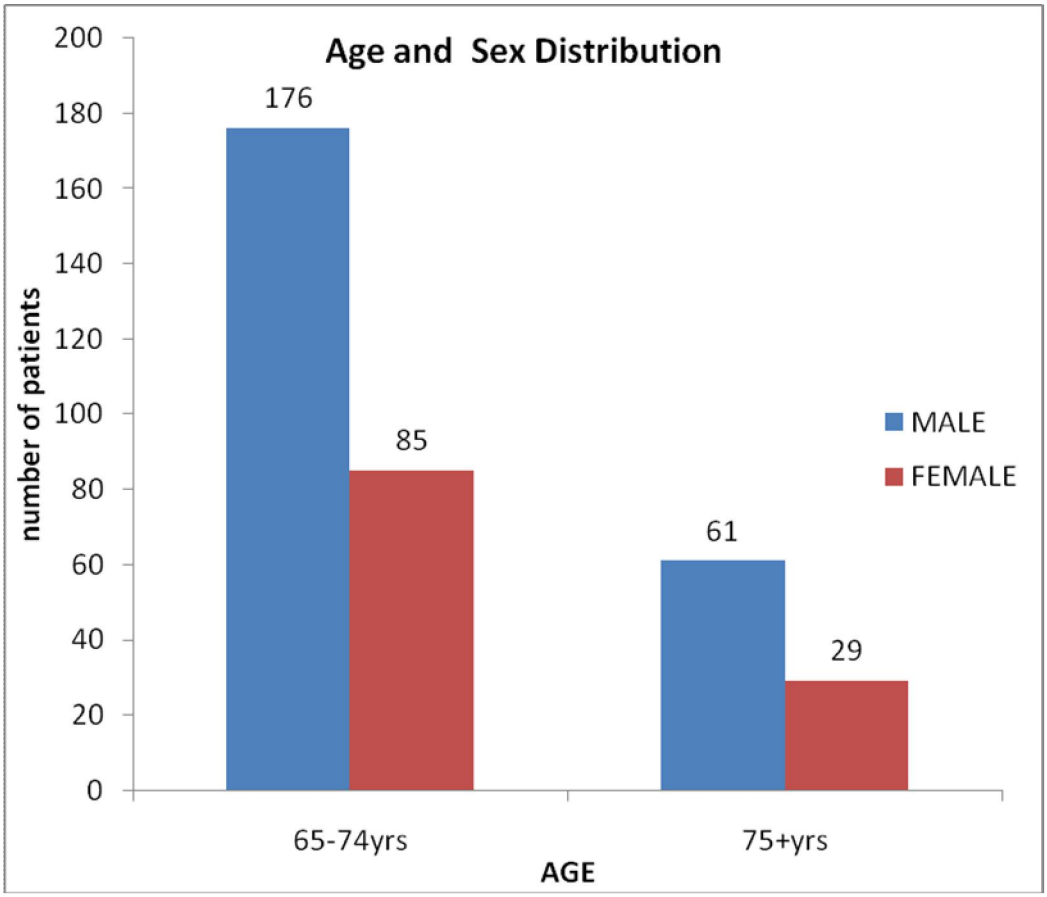
DIAGNOSIS	MALE (N=259) %	FEMALE (N=165) %
ACUTE EXACERBATION OF COPD	27.80	25.45
ASTHMA EXACERBATION	3.08	9.70
PULMONARY TUBERCULOSIS	7.72	9.70
PULMONARY TUBERCULOSIS SEQUELAE	8.1	10.90
LUNG CANCER	26.25	16.97
PNEUMONIA	11.58	15.15
BRONCHIECTASIS	2.70	3.03
DIFFUSE PARENCHYMAL LUNG DISEASE	5.40	1.81
PNEUMOCONIOSIS	0.39	0
PLEURAL DISEASES	6.95	7.27



UPPER RESPIRATORY TRACT INFECTION

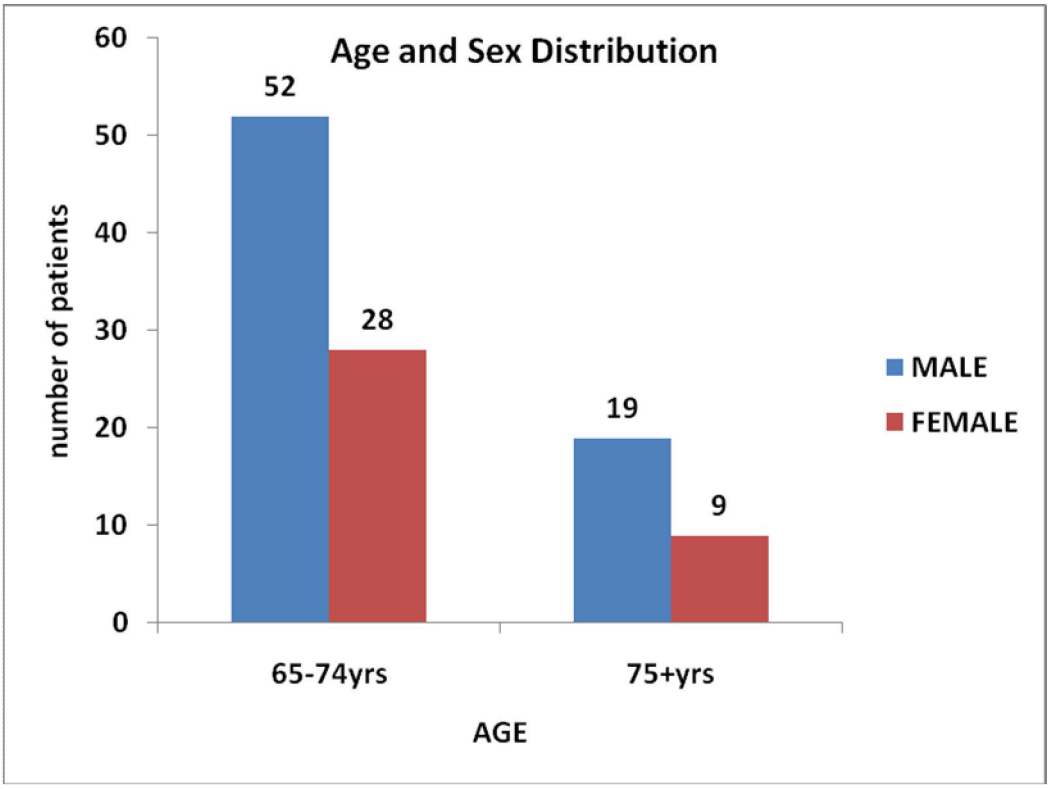
AGE AND SEX DISTRIBUTION

	65-74yrs	75+yrs
MALE	176	61
FEMALE	85	29



ACUTE BRONCHITIS

	65-74yrs	75+yrs
MALE	52	19
FEMALE	28	9

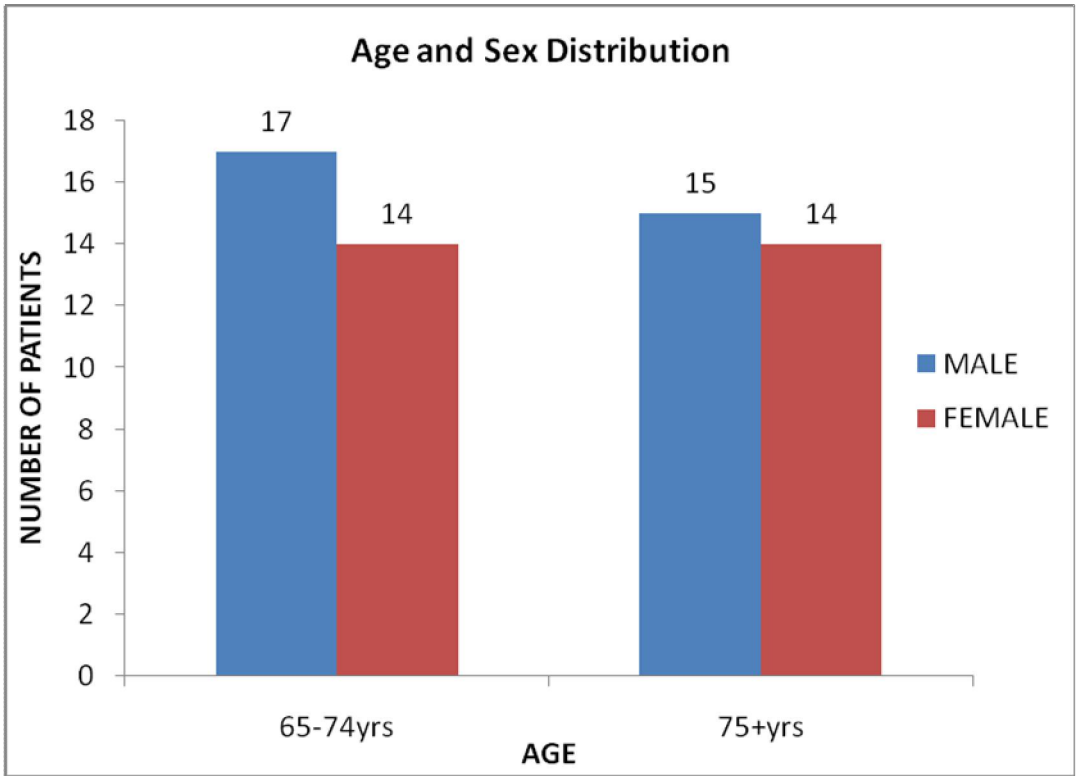


PNEUMONIA

	MALE	FEMALE
COMMUNITY ACQUIRED PNEUMONIA	32	28
HOSPITAL ACQUIRED PNEUMONIA	0	0
VENTILATOR ASSOCIATED PNEUMONIA	0	0

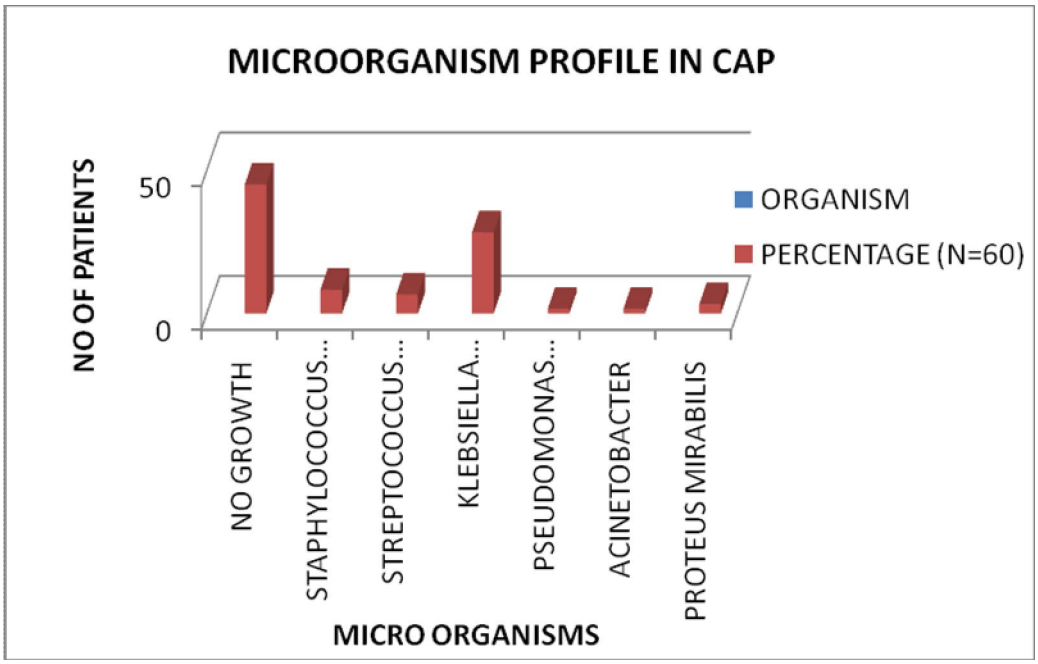
AGE AND SEX DISTRIBUTION

	65-74yrs	75+yrs
MALE	17	15
FEMALE	14	14



MICROORGANISMS ISOLATED IN COMMUNITY ACQUIRED PNEUMONIA

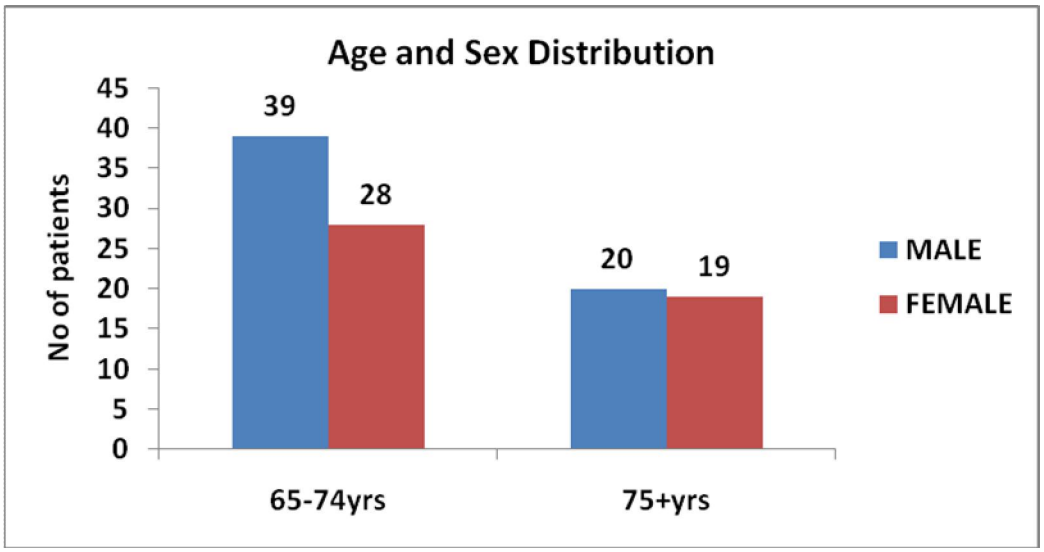
ORGANISM	TOTAL	PERCENTAGE (N=60)
NO GROWTH	**27**	**45**
STAPHYLOCOCCUS AUREUS	**5**	**8.33**
STREPTOCOCCUS PNEUMONIAE	**4**	**6.67**
KLEBSIELLA PNEUMONIAE	**17**	**28.33**
PSEUDOMONAS AERUGINOSA	**1**	**1.67**
ACINETOBACTER	**1**	**1.67**
PROTEUS MIRABILIS	**2**	**3.33**



PULMONARY TUBERCULOSIS

AGE AND SEX DISTRIBUTION

	65-74yrs	75+yrs
MALE	39	20
FEMALE	28	19

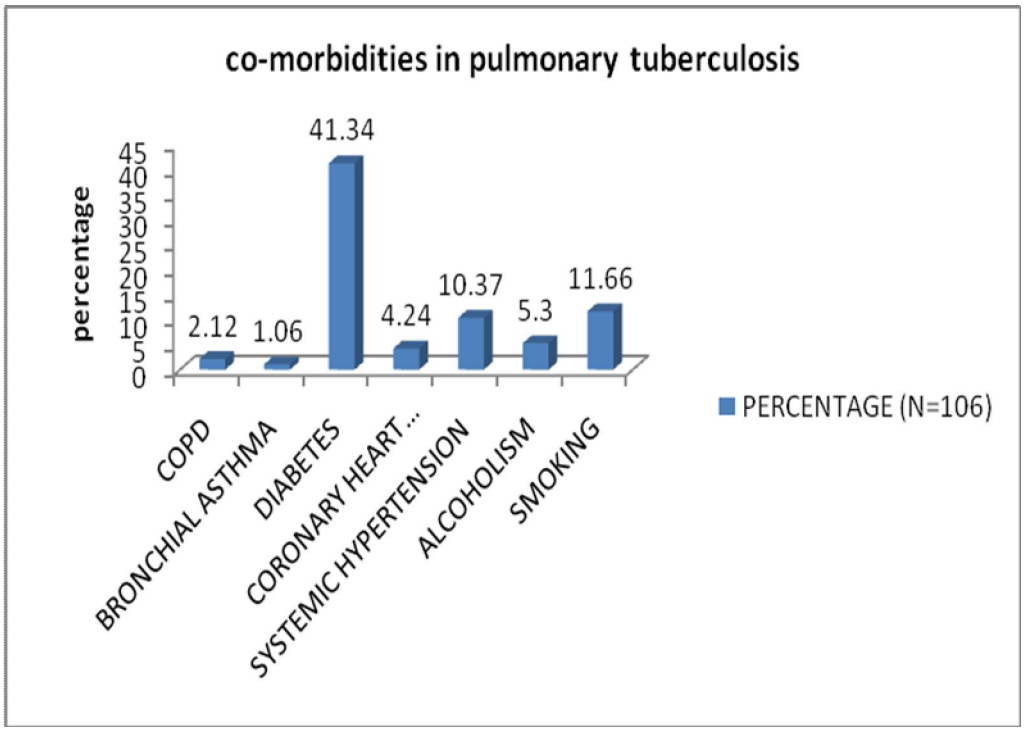


CATEGORY WISE PULMONARY TUBERCULOSIS

CATEGORY		MALE	FEMALE
CATEGORY I	NEW SPUTUM POSITIVE	30	24
	NEW SPUTUM NEGATIVE	15	9
CATEGORY II	RELAPSE	6	8
	FAILURE	5	2
	TREATMENT AFTER DEFAULT	2	3
	OTHER	-	-
DRUG RESISTANT TUBERCULOSIS	MONO	-	-
	PDR	1	-
	MDR	1	-
	XDR	-	-

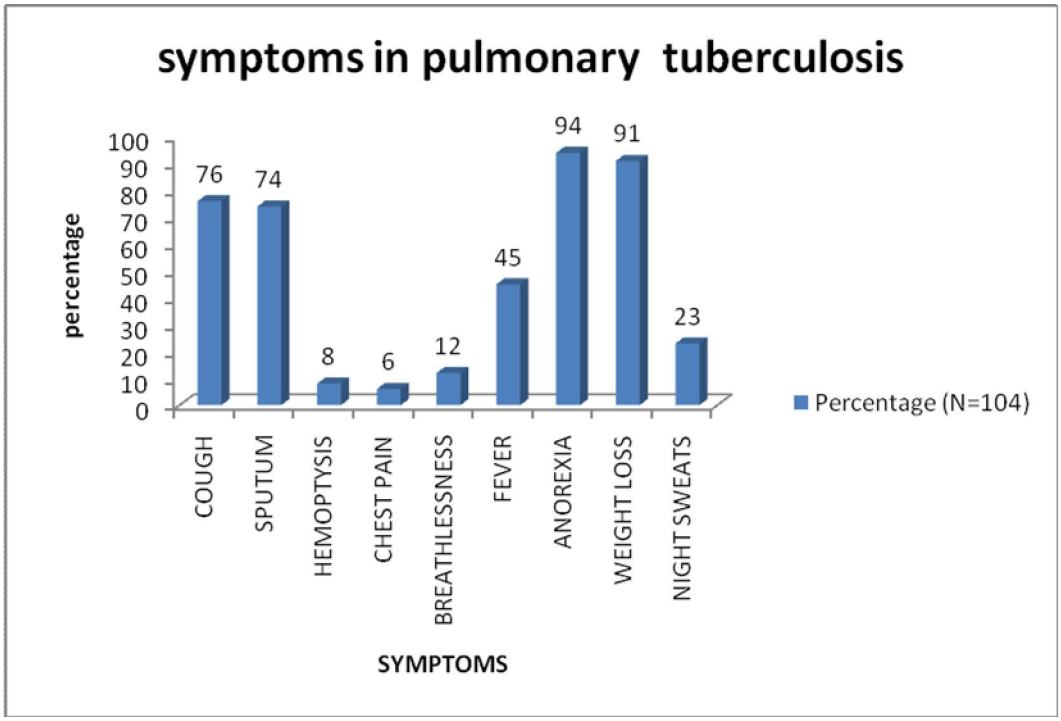
COMORBIDITIES IN PULMONARY TUBERCULOSIS

COMORBIDITY		TOTAL NUMBER OF PATIENTS	PERCENTAGE (N=106)
RESPIRATORY	COPD	2	2.12
	BRONCHIAL ASTHMA	1	1.06
SYSTEMIC	DIABETES	39	41.34
	CORONARY HEART DISEASE	4	4.24
	SYSTEMIC HYPERTENSION	11	10.37
OTHERS	ALCOHOLISM	5	5.3
	SMOKING	11	11.66



CLINICAL FEATURES OF PULMONARY TUBERCULOSIS IN GERIATRIC POPULATION

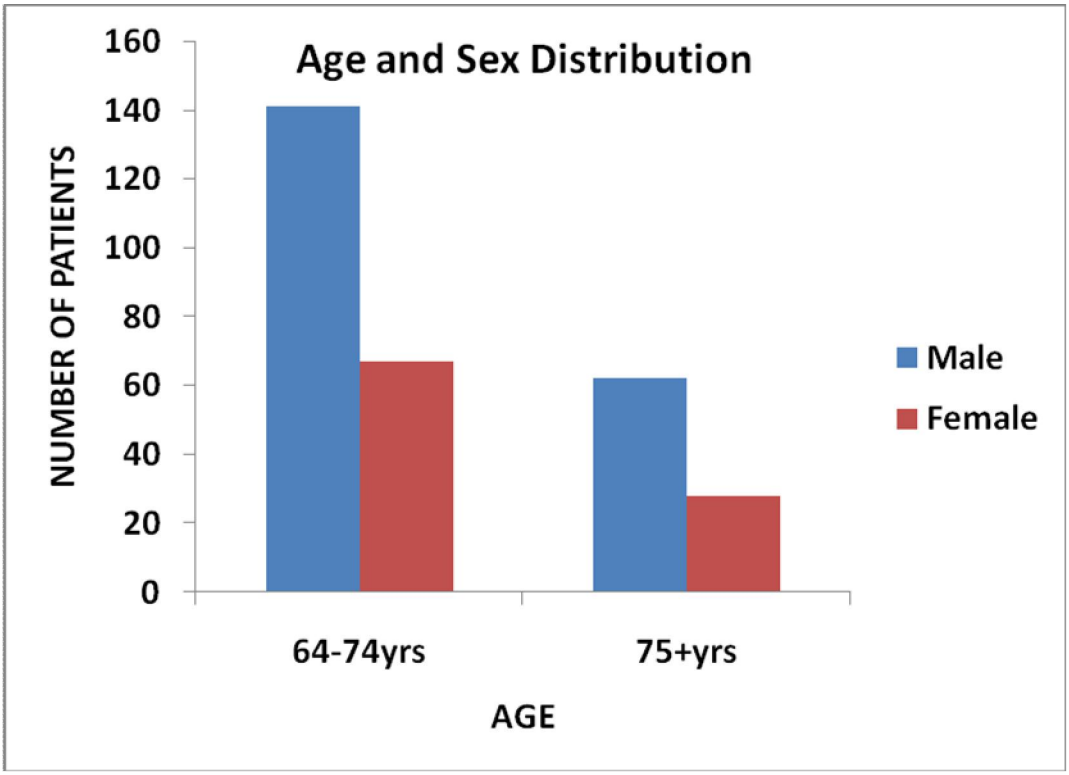
SYMPTOMS		Percentage (N=104)
RESPIRATORY	COUGH	76
	SPUTUM	74
	HEMOPTYSIS	8
	CHEST PAIN	6
	BREATHLESSNESS	12
CONSTITUTIONAL	FEVER	45
	ANOREXIA	94
	WEIGHT LOSS	91
	NIGHT SWEATS	23



COPD

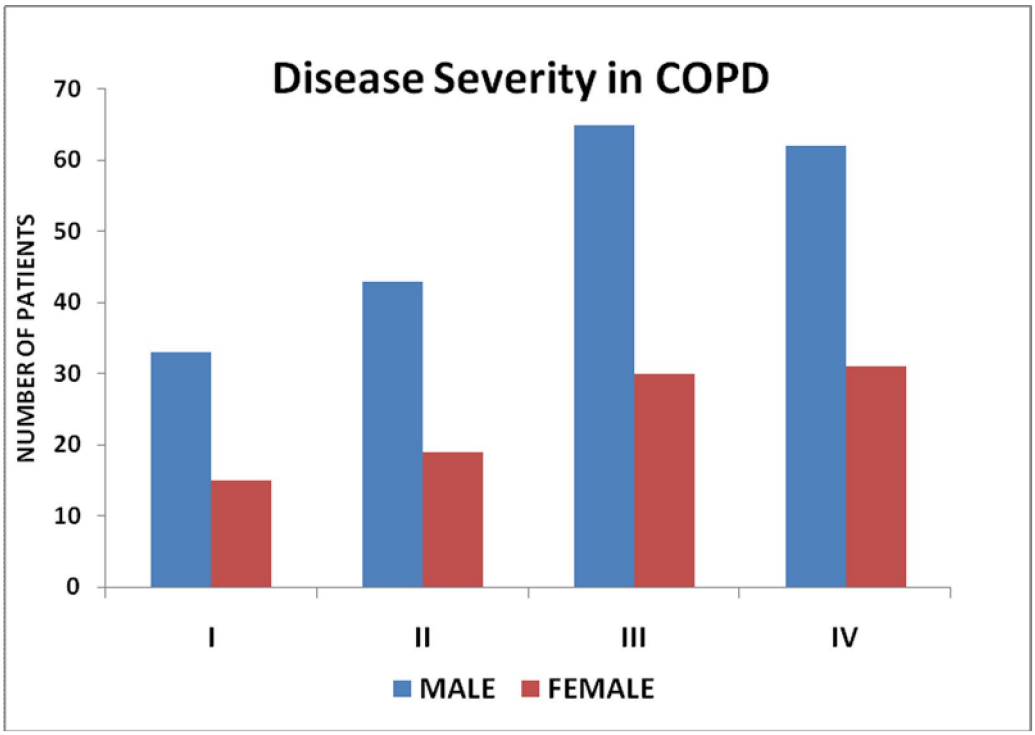
AGE AND SEX DISTRIBUTION

	64-74yrs	75+yrs
Male	141	62
Female	67	28



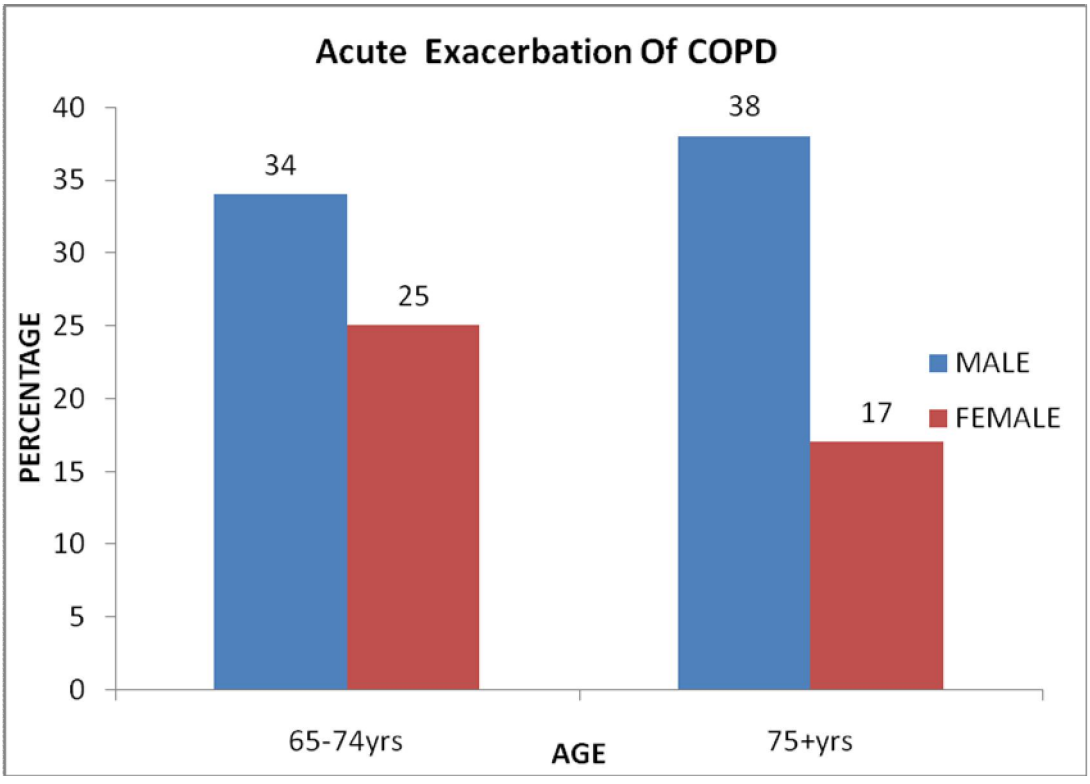
DISEASE SEVERITY IN COPD

STAGE	MALE (N=203)	FEMALE (N=95)
I	16.26	15.79
II	21.18	20.00
III	32.02	31.58
IV	30.54	32.63



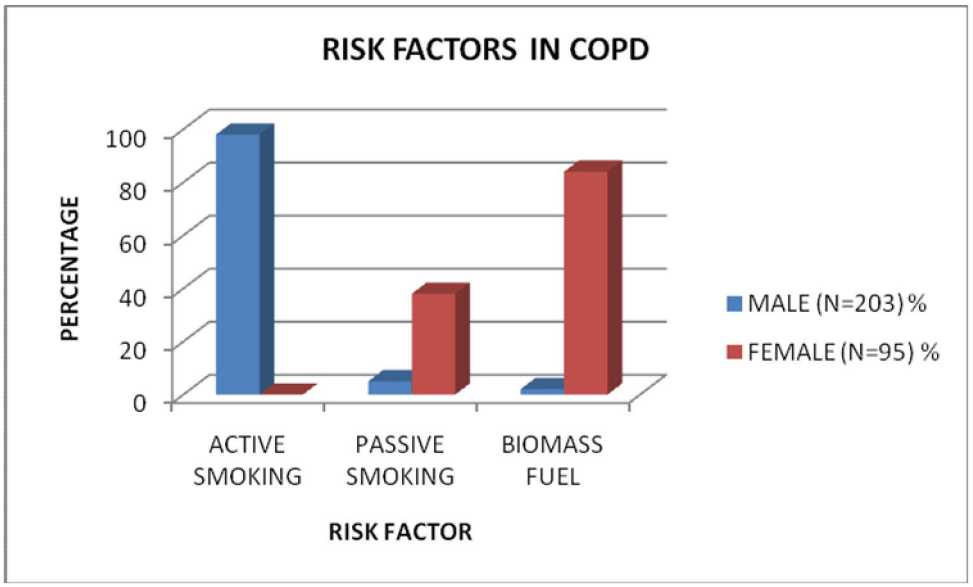
ACUTE EXACERBATION OF COPD

	65-74yrs	75+yrs
MALE	34	38
FEMALE	25	17



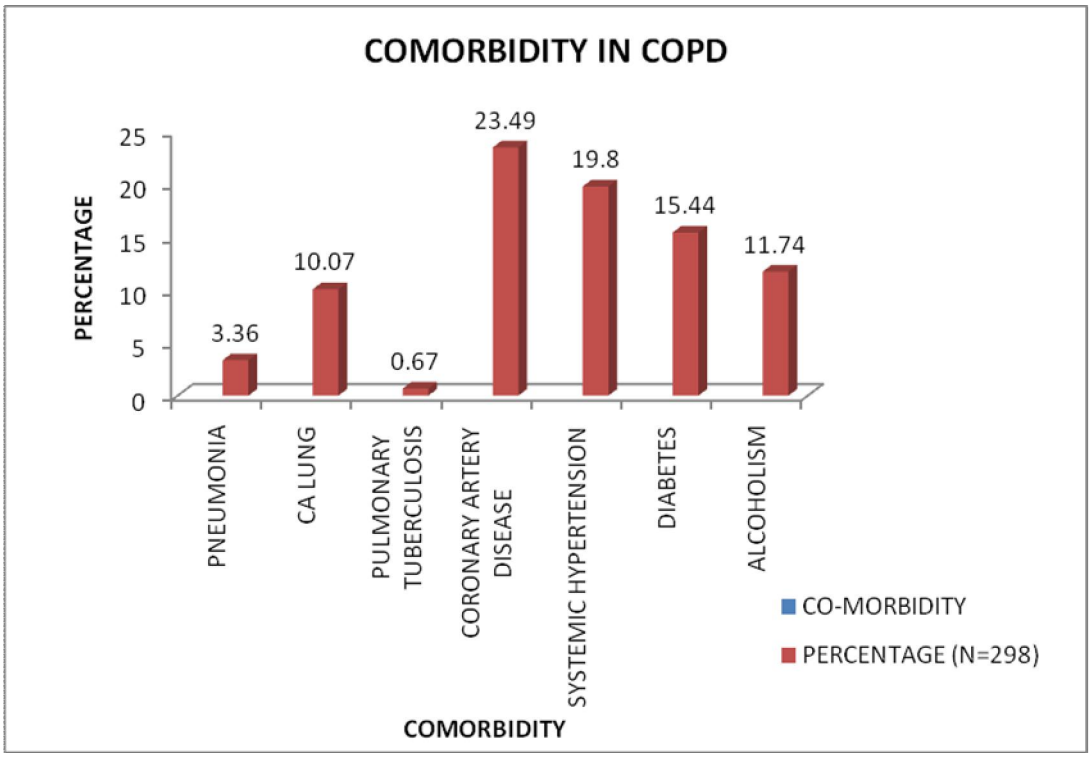
ASSOCIATION OF RISK FACTORS WITH COPD

RISK FACTOR	MALE (N=203) %	FEMALE (N=95) %
ACTIVE SMOKING	98	0
PASSIVE SMOKING	5	38
BIOMASS FUEL	2	84



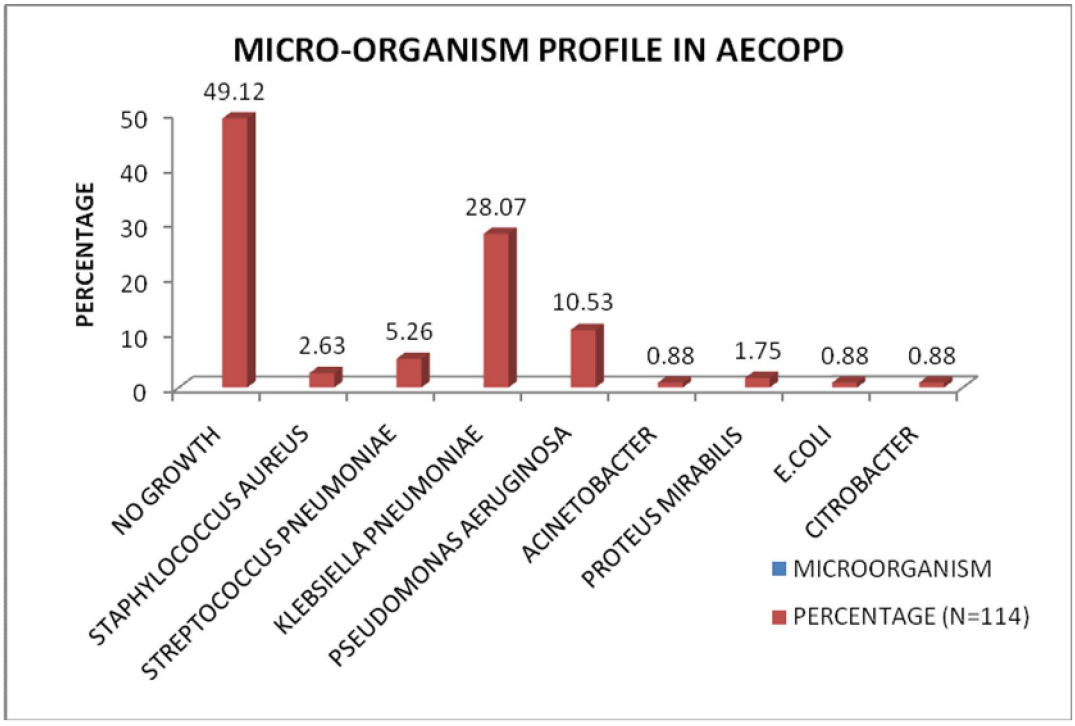
CO-MORBIDITIES IN COPD

CO-MORBIDITY		NUMBER OF PATIENTS	PERCENTAGE (N=298)
RESPIRATORY	PNEUMONIA	10	3.36
	CA LUNG	30	10.07
	PULMONARY TUBERCULOSIS	2	0.67
SYSTEMIC	CORONARY ARTERY DISEASE	70	23.49
	SYSTEMIC HYPERTENSION	59	19.80
	DIABETES	46	15.44
OTHERS	ALCOHOLISM	35	11.74



MICRO-ORGANISM PROFILE IN AECOPD

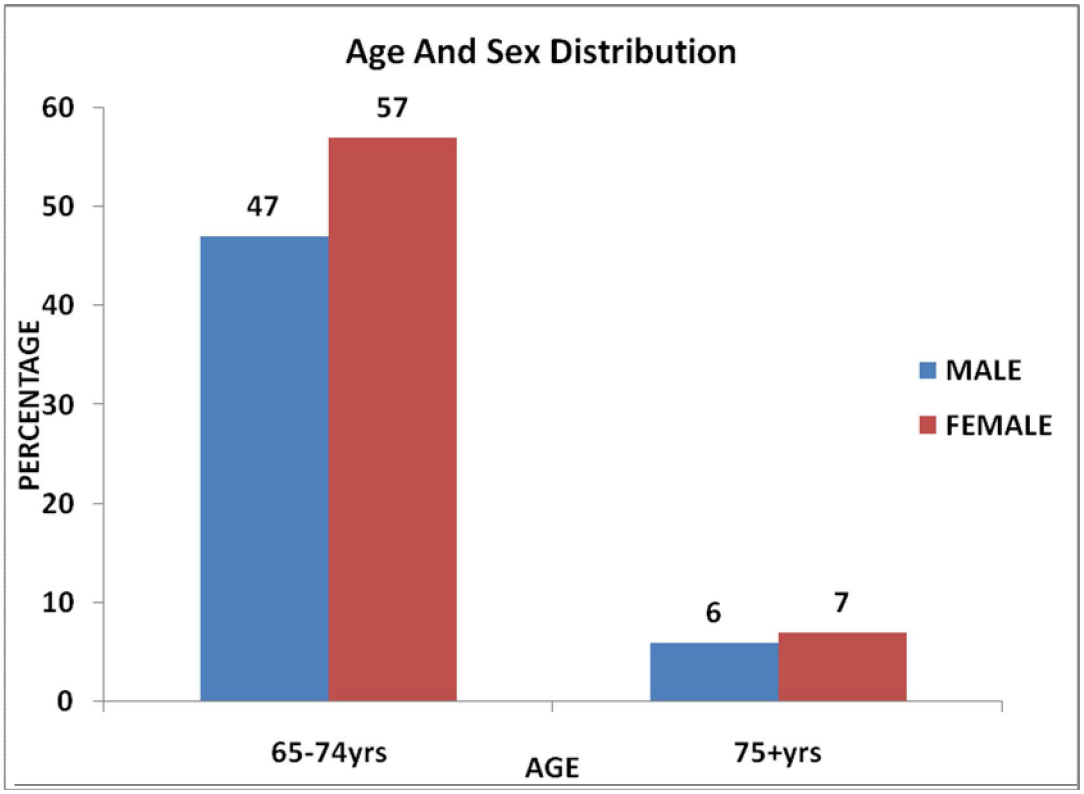
MICROORGANISM	NUMBER OF PATIENTS	PERCENTAGE (N=114)
NO GROWTH	56	49.12
STAPHYLOCOCCUS AUREUS	3	2.63
STREPTOCOCCUS PNEUMONIAE	6	5.26
KLEBSIELLA PNEUMONIAE	32	28.07
PSEUDOMONAS AERUGINOSA	12	10.53
ACINETOBACTER	1	0.88
PROTEUS MIRABILIS	2	1.75
E.COLI	1	0.88
CITROBACTER	1	0.88



BRONCHIAL ASTHMA

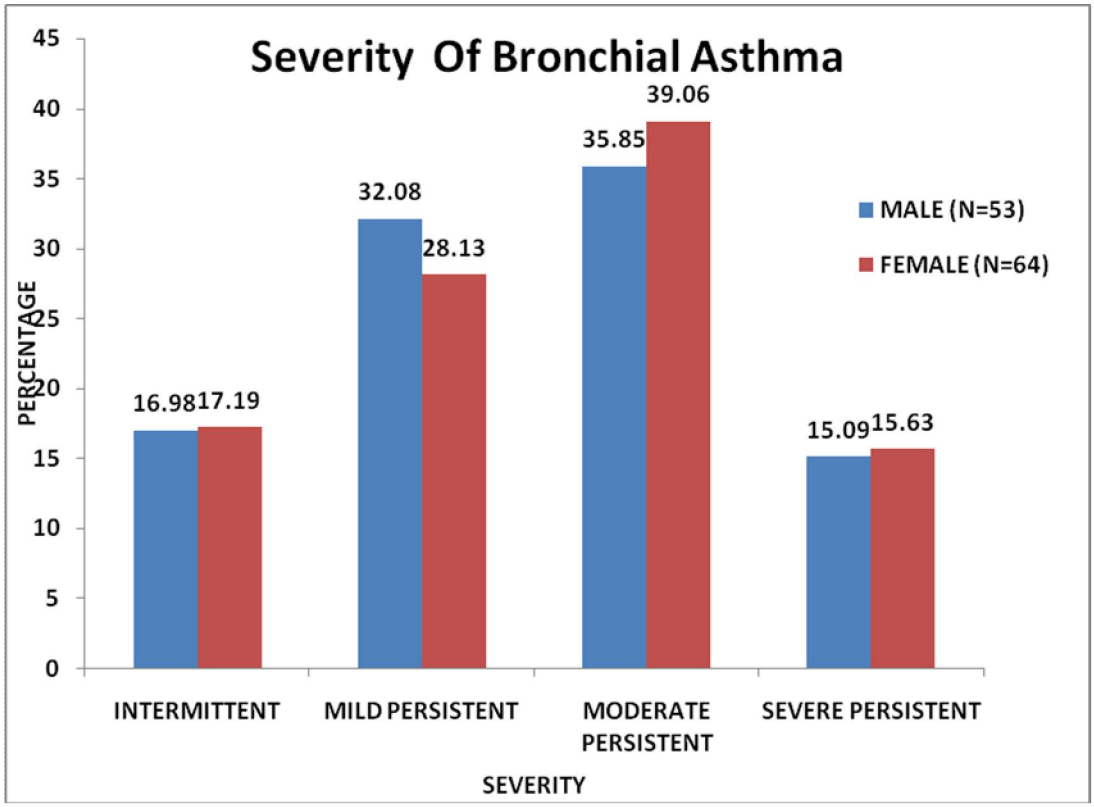
AGE AND SEX DISTRIBUTION

	65-74yrs	75+yrs
MALE	47	6
FEMALE	57	7



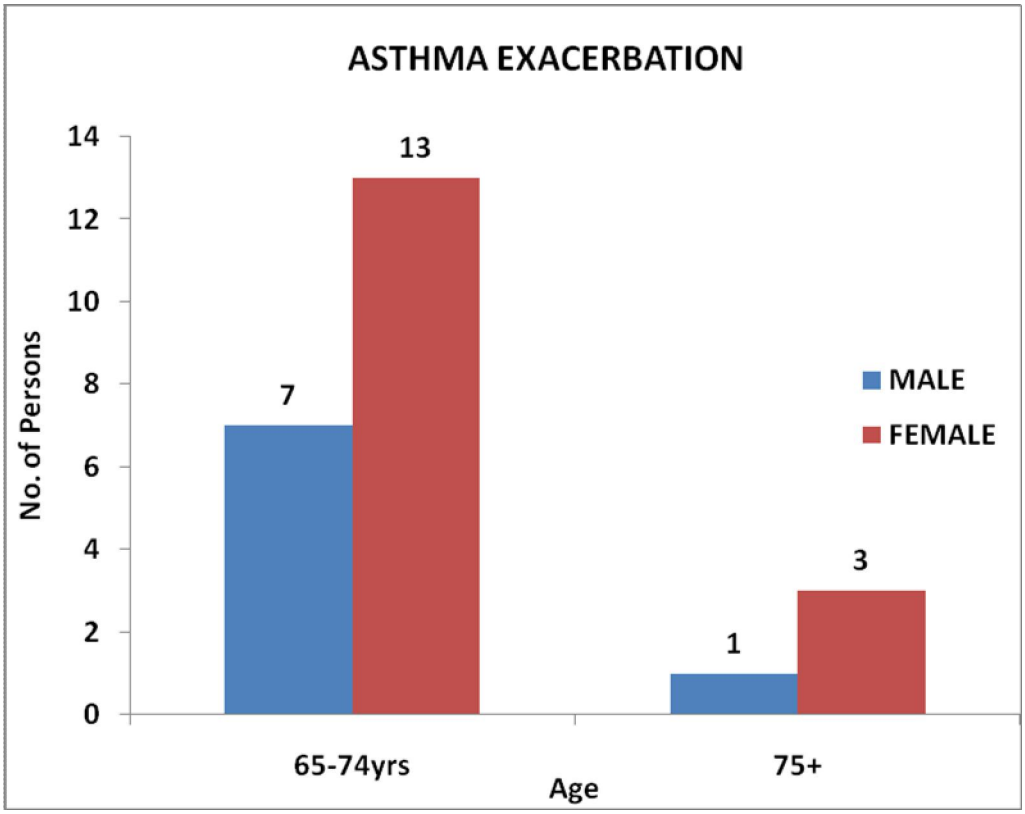
SEVERITY OF BRONCHIAL ASTHMA

STAGE	MALE (N=53)	FEMALE (N=64)
INTERMITTENT	16.98	17.19
MILD PERSISTENT	32.08	28.13
MODERATE PERSISTENT	35.85	39.06
SEVERE PERSISTENT	15.09	15.63



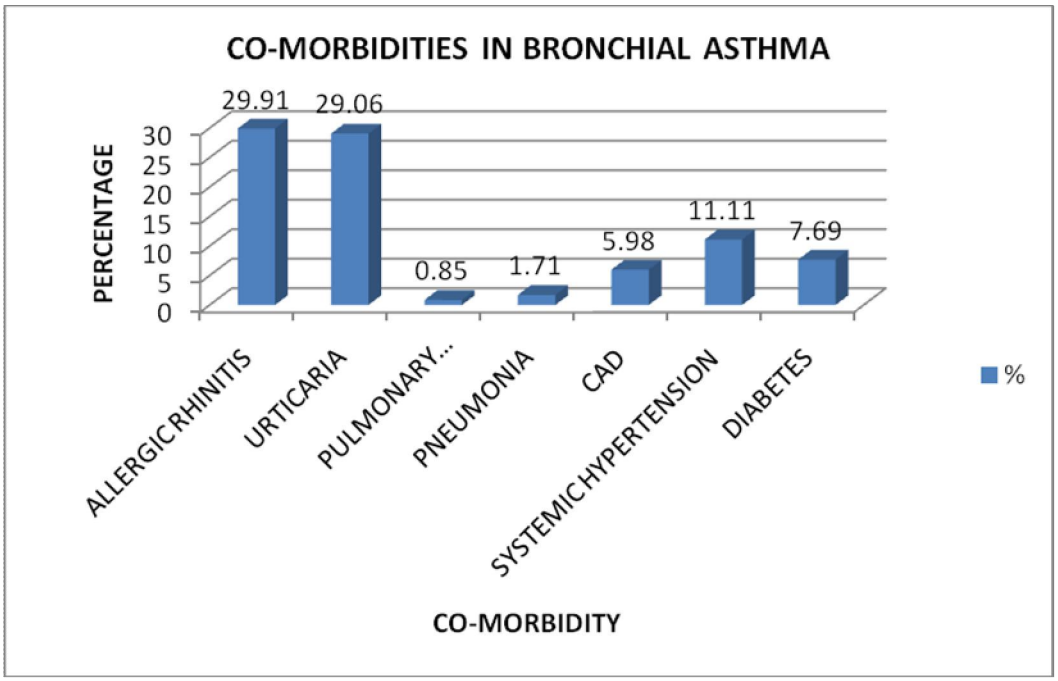
ASTHMA EXACERBATION

	65-74yrs	75+yrs
MALE	7	1
FEMALE	13	3



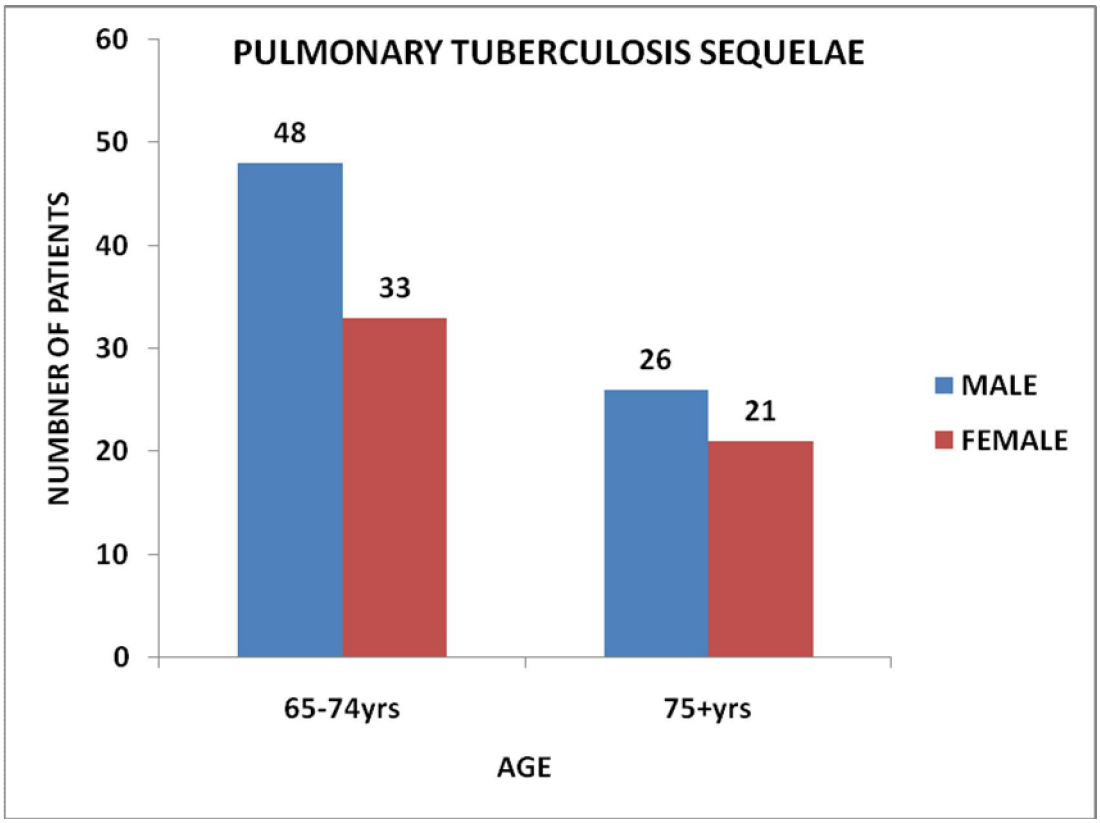
CO-MORBIDITIES IN BRONCHIAL ASTHMA

CO-MORBIDITY		NUMBER OF PATIENTS	PERCENTAGE %
ALLERGIC DISEASES	ALLERGIC RHINITIS	35	29.91
	URTICARIA	34	29.06
RESPIRATORY	PULMONARY TUBERCULOSIS	1	0.85
	PNEUMONIA	2	1.71
SYSTEMIC	CAD	7	5.98
	SYSTEMIC HYPERTENSION	13	11.11
	DIABETES	9	7.69



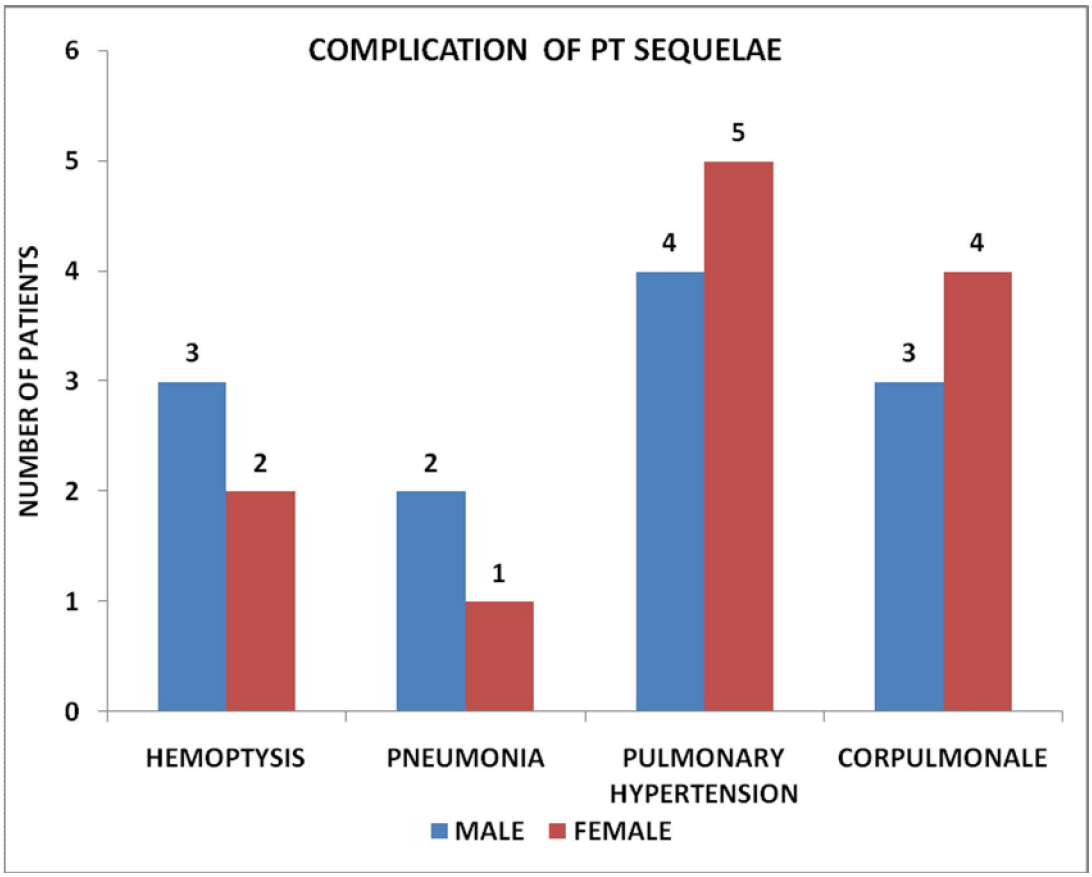
PUMONARY TUBERCULOSIS SEQUELAE

	65-74yrs	75+yrs
MALE	48	26
FEMALE	33	21



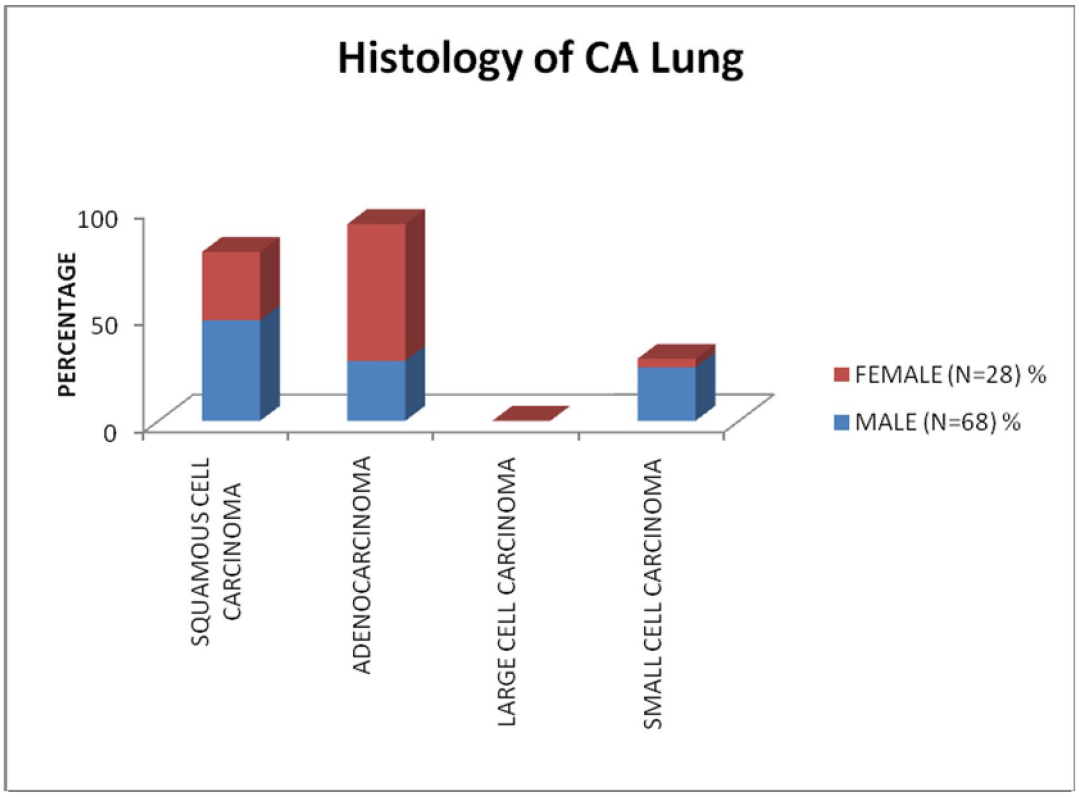
COMPLICATION OF PT SEQUELAE

COMPLICATIONS	MALE	FEMALE
HEMOPTYSIS	3	2
PNEUMONIA	2	1
PULMONARY HYPERTENSION	4	5
CORPULMONALE	3	4



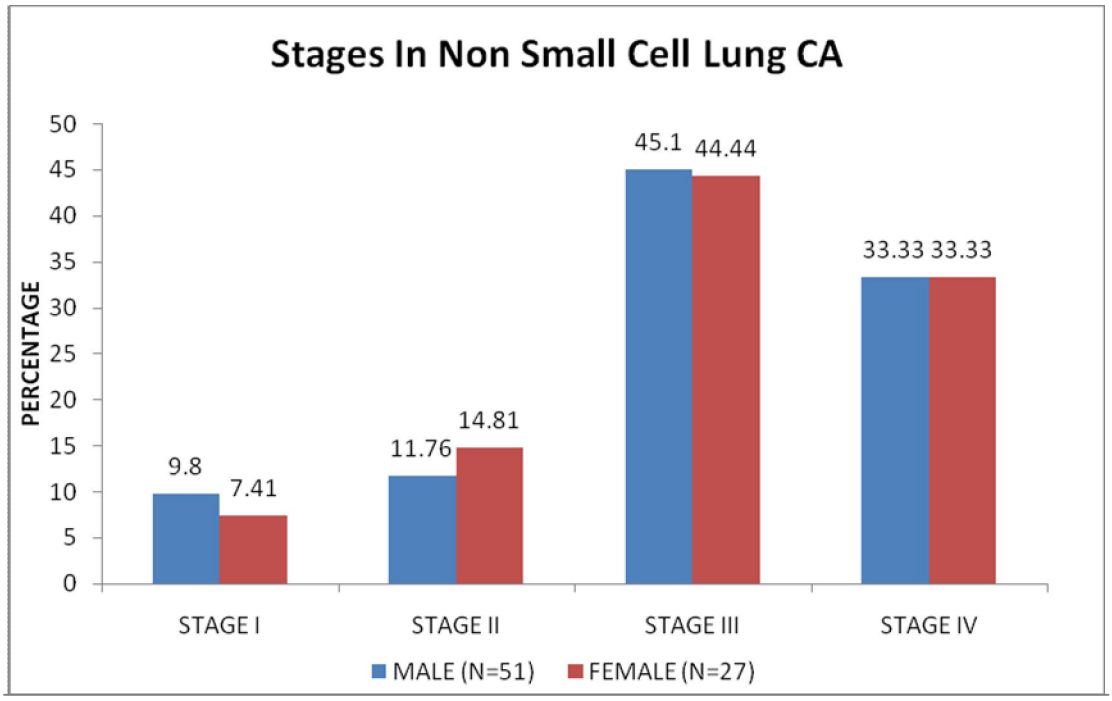
CARCINOMA LUNG

HISTOLOGY	MALE (N=68) %	FEMALE (N=28) %
SQUAMOUS CELL CARCINOMA	47	32
ADENOCARCINOMA	28	64
LARGE CELL CARCINOMA	-	-
SMALL CELL CARCINOMA	25	4



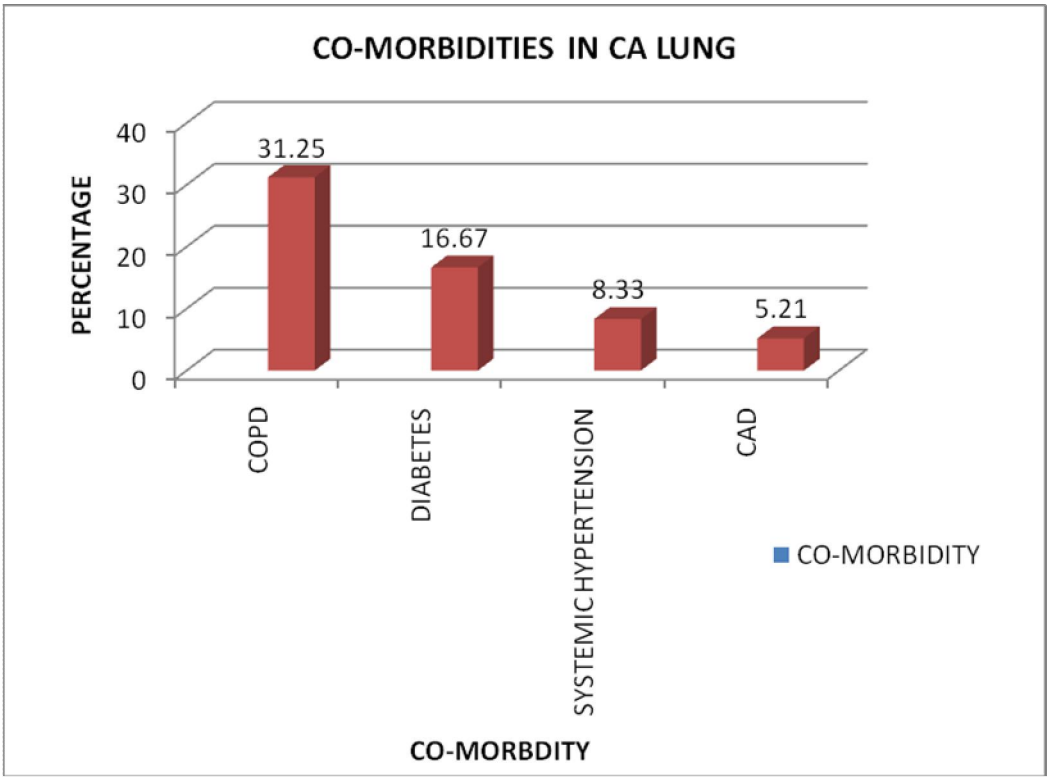
STAGES IN NON SMALL CELL LUNG CANCER

STAGE	MALE (N=51)	FEMALE (N=27)
STAGE I	9.80	7.41
STAGE II	11.76	14.81
STAGE III	45.10	44.44
STAGE IV	33.33	33.33



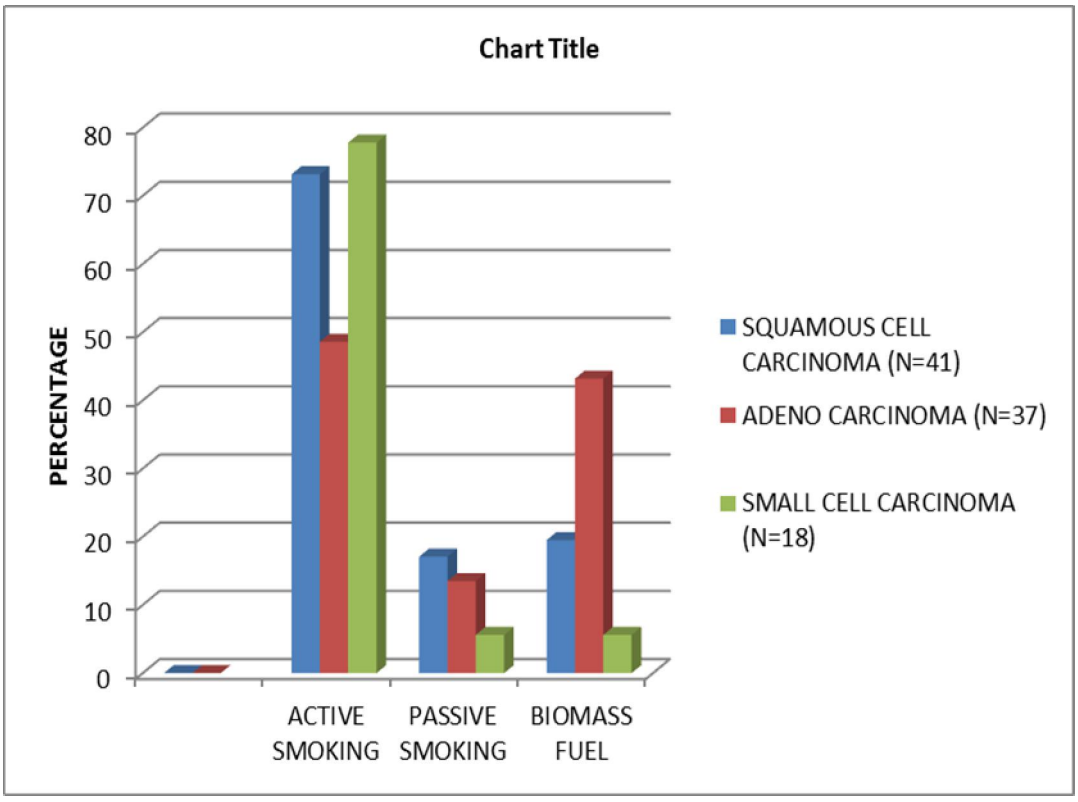
CO-MORBIDITIES IN CA LUNG

CO-MORDITY		NUMBER OF PATIENTS	PERCENTAGE (N=96)
RESPIRATORY	COPD	30	31.25
SYSTEMIC	DIABETES	16	16.67
	SYSTEMIC HYPERTENSION	8	8.33
	CAD	5	5.21



RISK FACTORS ASSOCIATED WITH LUNG CANCER

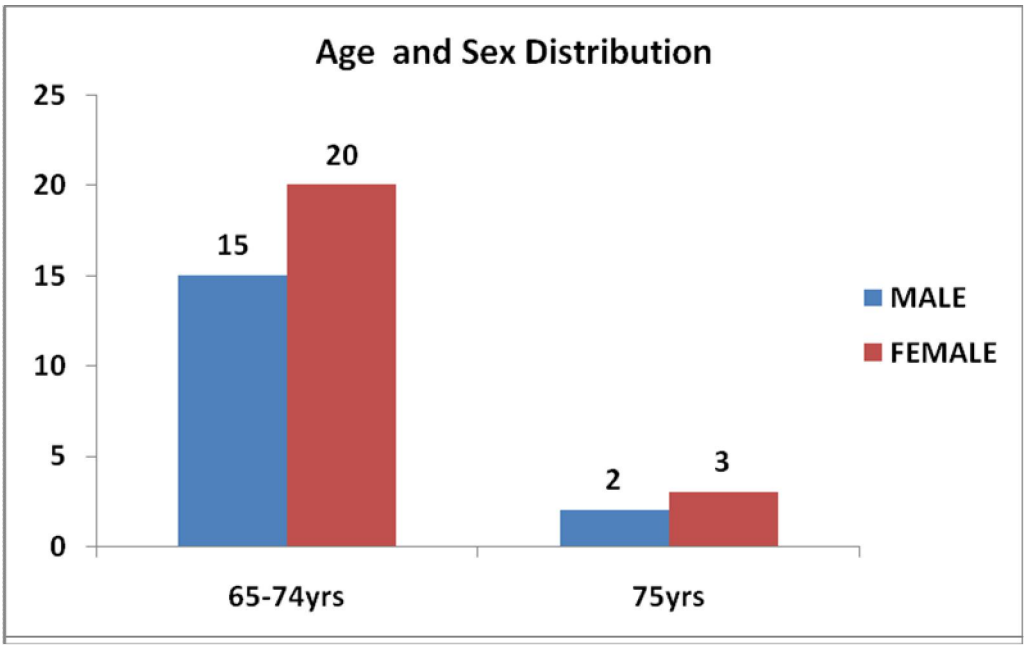
RISK FACTOR	SQUAMOUS CELL CARCINOMA (N=41) %	ADENO CARCINOMA (N=37) %	SMALL CELL CARCINOMA (N=18)
ACTIVE SMOKING	73.17	48.6	77.8
PASSIVE SMOKING	17.07	13.5	5.6
BIOMASS FUEL	19.51	43.2	5.6



BRONCHIECTASIS

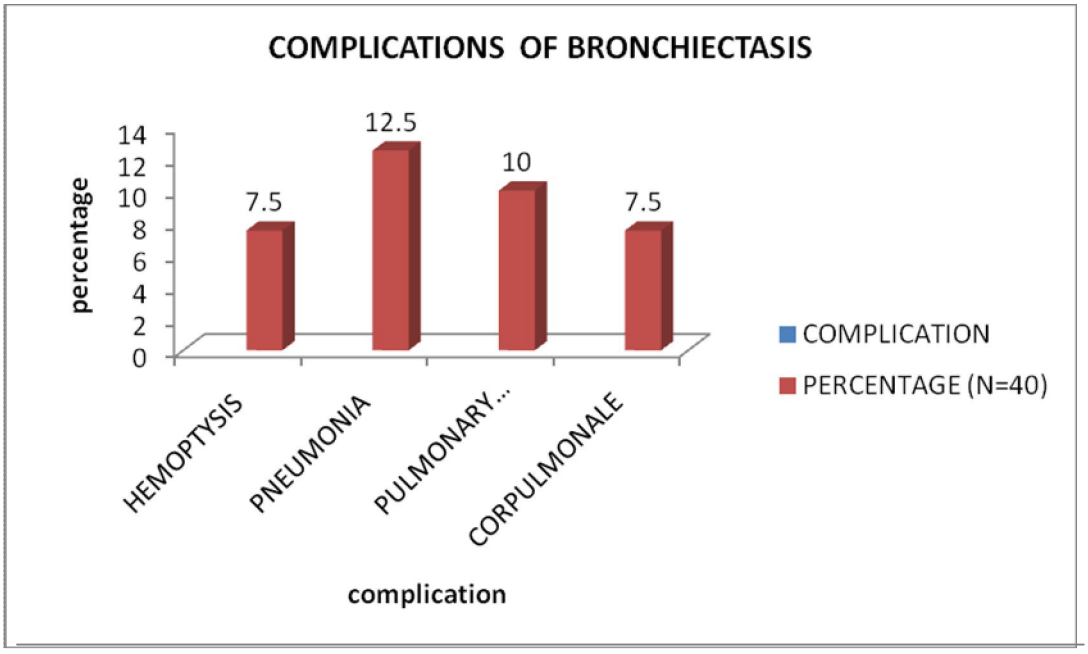
AGE AND SEX DISTRIBUTION

	65-74yrs	75+yrs
MALE	15	2
FEMALE	20	3



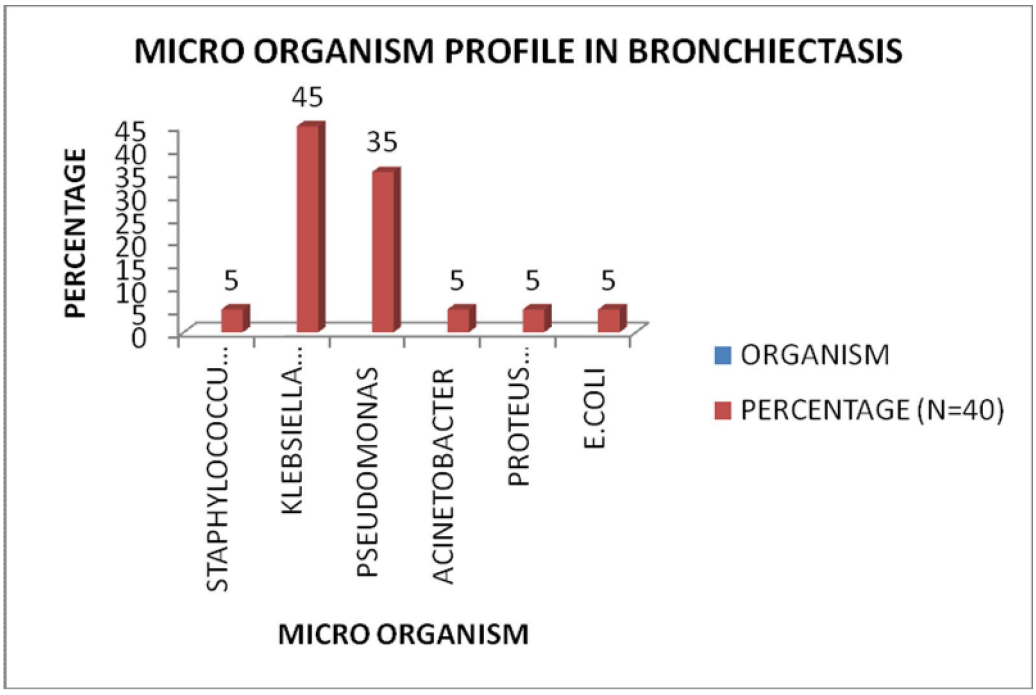
COMPLICATIONS OF BRONCHIECTASIS

COMPLICATION	NUMBER OF PATIENTS	PERCENTAGE (N=40)
HEMOPTYSIS	3	7.5
PNEUMONIA	5	12.5
PULMONARY HYPERTENSION	4	10
CORPULMONALE	3	7.5



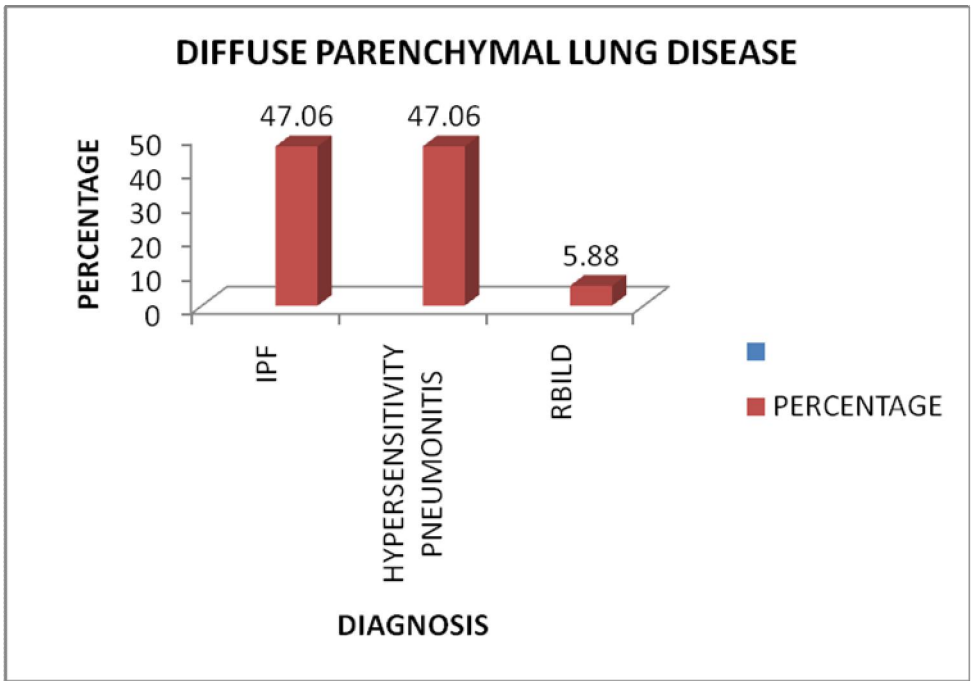
MICRO-ORGANISM PROFILE IN BRONCHIECTASIS

ORGANISM	NUMBER OF PATIENTS	PERCENTAGE (N=40)
STAPHYLOCOCCUS AUREUS	2	5
KLEBSIELLA PNEUMONIA	18	45
PSEUDOMONAS	14	35
ACINETOBACTER	2	5
PROTEUS MIRABILIS	2	5
E.COLI	2	5



DIFFUSE PULMONARY LUNG DISEASE

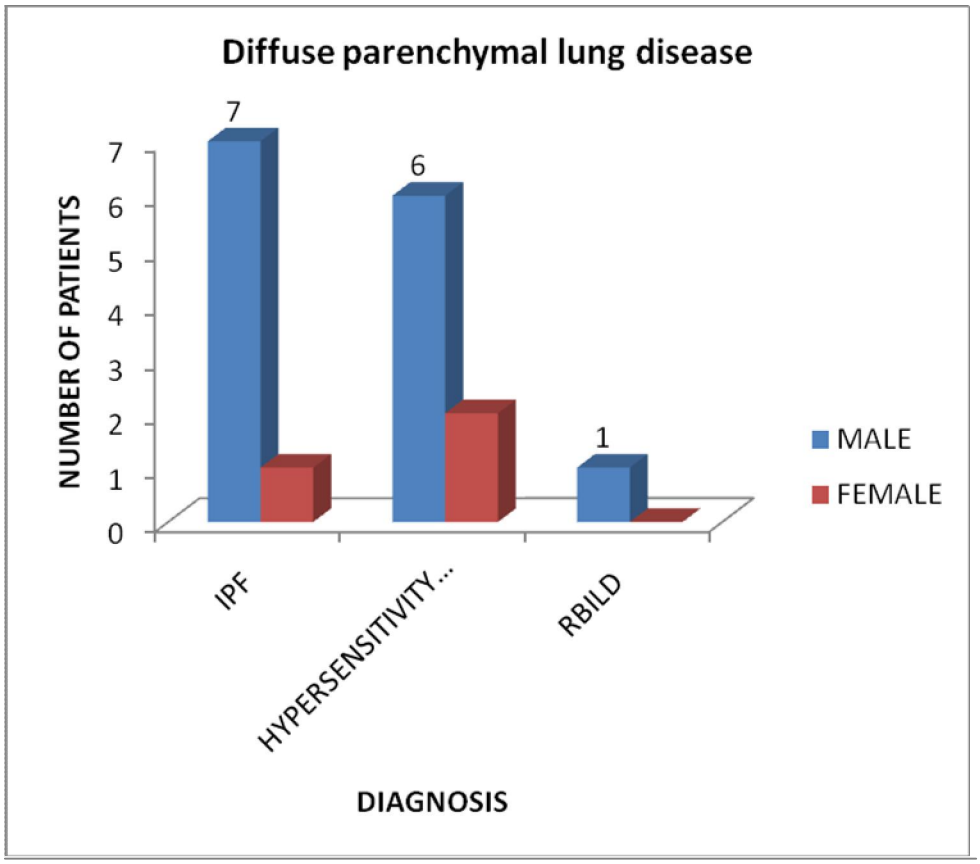
DISEASE	TOTAL	PERCENTAGE
IPF	8	47.06
HYPERSENSITIVITY PNEUMONITIS	8	47.06
RBILD	1	5.88



DIFFUSE PULMONARY LUNG DISEASE

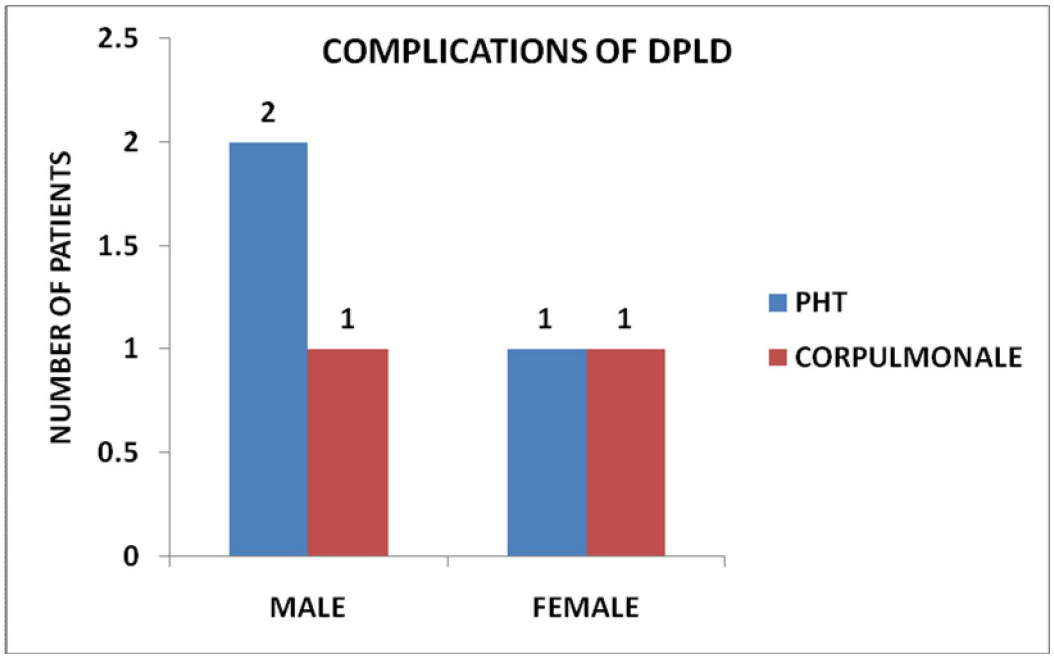
SEX DISTRIBUTION

DISEASE	MALE	FEMALE
IPF	7	1
HYPERSENSITIVITY PNEUMONITIS	6	2
RBILD	1	0



COMPLICATIONS OF DPLD

COMPLICATION	MALE	FEMALE
PHT	2	1
CORPULMONALE	1	1

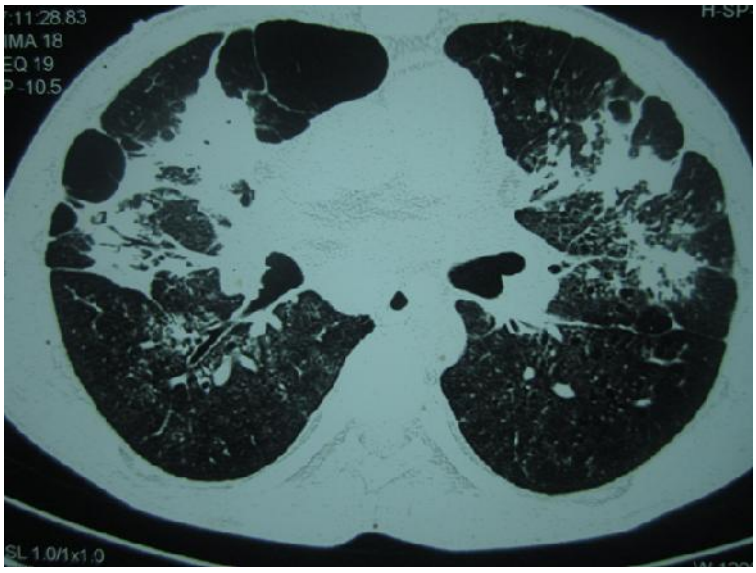


PNEUMOCONIOSIS

SILICOSIS

In this study one case of silicosis with progressive massive fibrosis was found and the case details are as follows

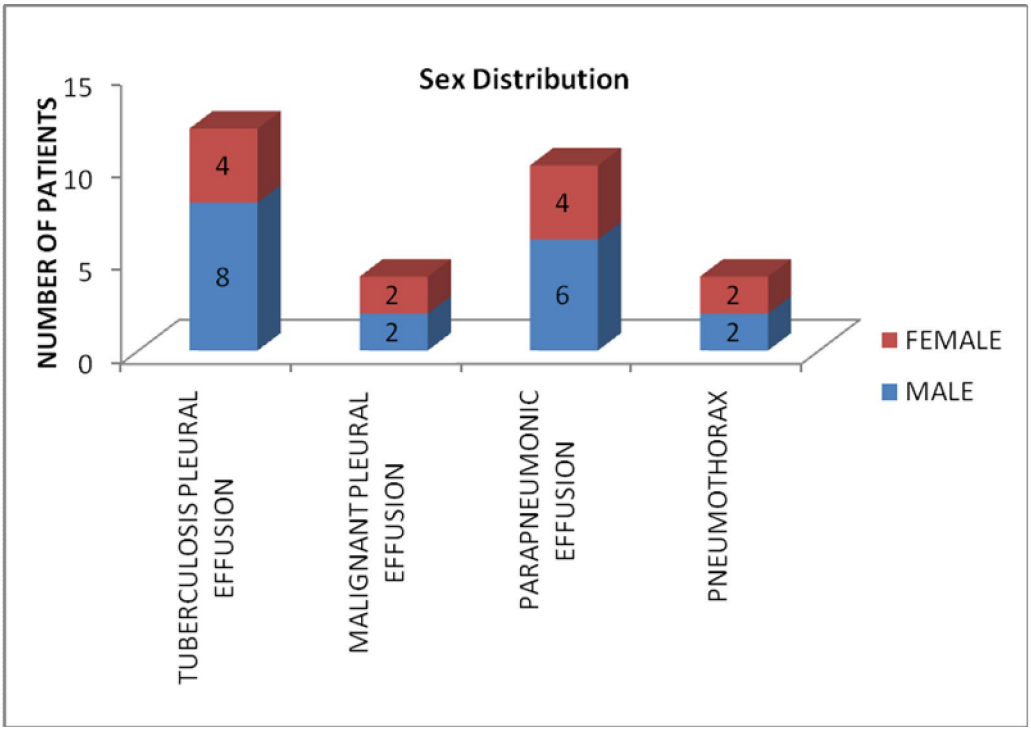
- **68 year old male presented with breathlessness, fever, cough**
- **No history of prior ATT**
- **Smoker for past 35 years**
- **Occupation – digging wells with compressor /drilling machines/using explosives for rock blasting from age 35 to 52years.**
- **Sputum AFB negative**
- **Bronchial wash –AFB negative**
- **CT chest- hyperdense conglomerate mass of fibrosis suggestive of silicosis with progressive massive fibrosis.**



PLEURAL DISEASES

SEX DISTRIBUTION

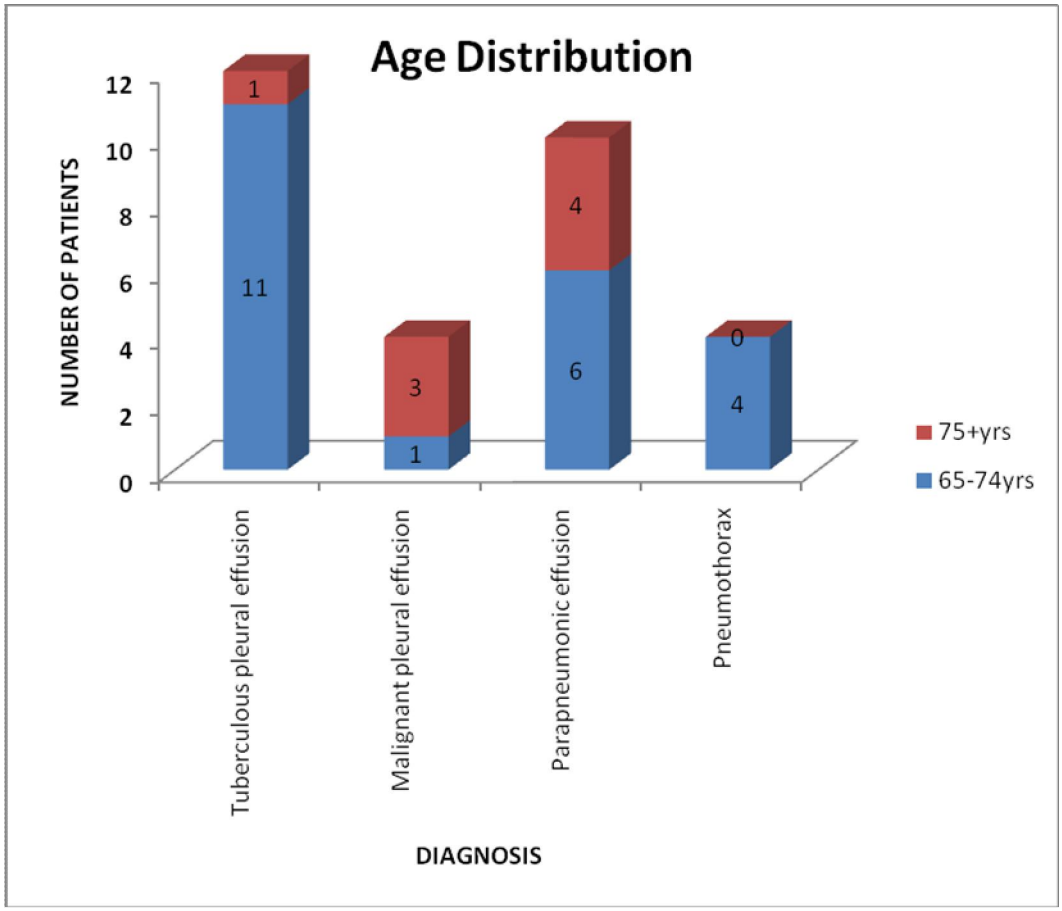
ETIOLOGY	MALE	FEMALE
TUBERCULOUS PLEURAL EFFUSION	8	4
MALIGNANT PLEURAL EFFUSION	2	2
PARAPNEUMONIC EFFUSION	6	4
PNEUMOTHORAX	2	2



PLEURAL DISEASES

DIAGNOSIS AGE DISTRIBUTION

ETIOLOGY	65-74yrs	75+yrs
Tuberculous pleural effusion	11	1
Malignant pleural effusion	1	3
Parapneumonic effusion	6	4
Pneumothorax	4	-



DISCUSSION

DISCUSSION

In this prospective observational study 1234 patients were studied in which males were 773 and females were 461. The age ranged from 65 to 89 years with a mean age of 70.1years. In the age group of 65-74years there were 890 patients and 344 in the age group 75+years.

Respiratory tract infection including upper respiratory tract infection (28.44%), acute bronchitis(8.75%) , community acquired pneumonia(4.86%) and pulmonary tuberculosis(8.58%) constitute 50.63% of the morbidity.

Among respiratory infection pulmonary tuberculosis stands second.Out of the total 106 pulmonary tuberculosis patients 54 were new sputum positive patients and 24 new sputum negative patients. In the 26 patients started on category II ATT 14 was due to relapse, 7 due to failure and 5were started due to treatment after default. Diabetes was the commonest co morbidity found in Elderly patients with pulmonary tuberculosis present in 36.79 %. Elderly tuberculous patient presented more commonly with constitutional symptoms compared to respiratory symptoms. Tuberculosis with its sequelae constitutes 18.96% of the morbidity.

Community acquired pneumonia is third among respiratory tract infection with diabetes as the commonest comorbidity associated with. Klebsiella pneumoniae was the commonest organism isolated found in 29% of the patients of community acquired pneumonia.

COPD is the next major contributor with 24% of overall morbidity. It is also the commonest cause for inpatient care as AECOPD. Among males 98% of the **COPD** patients were smokers and in case of females 38% had exposure to passive smoking and 84% had exposure to biomass smoke. Most of the COPD patients in this group were in stage 3 and stage 4 of severity in both males as well as females. Klebsiella pneumonia and pseudomonas aeruginosa were isolated in 28.07% and 10.53% of the patients with AECOPD.

There were 117 patients of Bronchial Asthma in this study in which females contribute 54.7% and males 45.3%. Most of the patients were in mild persistent (29.9%) and moderate persistent stage (37.6%) of severity.

Total number of patients diagnosed to have lung carcinoma during the period of study was 96 with 58 male patients and 28 females. Squamous cell carcinoma was the commonest histological pattern among all carcinomas with 42.71% and in males it contributed to

47.06%. In females adenocarcinoma was the commonest with 64.29%. Majority of the elderly patients with lung carcinoma presented in stage III(44.44%) and stage IV disease(33.33%). Active smoking was the major risk factor present in 92% of the males and in females it is biomass fuel in 67.8% of cases.

Out of 40 patients with Bronchiectasis 17 were males and 23 were females.

Idiopathic pulmonary fibrosis, hypersensitivity pneumonitis and RBILD are three diffuse parenchymal lung disease diagnosed in this study with 47.06%, 47.06% and 5.88% respectively.

Pleural diseases in the elderly constitute 2.43% of the total. Infectious causes including tuberculosis and parapneumonic infections are the commonest etiology with 22 patients followed by 4 cases of malignancy and 4 cases of pneumothorax.

CONCLUSION

CONCLUSION

Respiratory Infections and their complications, consisting of UPPER RESPIRATORY TRACT INFECTION, ACUTE BRONCHITIS, COMMUNITY ACQUIRED PNEUMONIA, PULMONARY TUBERCULOSIS AND ITS SEQUELAE, constitute the major respiratory morbidity among Geriatric population attending this tertiary care center.

UPPER RESPIRATORY TRACT INFECTION AND ACUTE BRONCHITIS is the commonest cause for seeking outpatient care.

Pulmonary tuberculosis is the second commonest respiratory infection and ranks fifth in overall respiratory morbidity. Sequelae of pulmonary tuberculosis causes significant respiratory morbidity in the elderly constituting about 10.3%. Pulmonary tuberculosis and its sequelae together constitute 18.96%.

Among infective disease community acquired pneumonia ranks third. Diabetes is the commonest co morbidity associated with community acquired pneumonia.

COPD is the second most common respiratory morbidity without any gender difference.Active smoking is the commonest predisposing factor for COPD in males whereas it is exposure to indoor pollution in females.AECOPD is the most common cause of inpatient care.

Bronchial asthma constitutes 9.48% of the morbidity.

Carcinoma lung constitutes 7.77%. Squamous cell carcinoma is the commonest type of lung cancer among males and it is adenocarcinoma in females.Active smoking is the commonest risk factor for lung cancer in males whereas it is exposure to indoor pollution in females. Lung cancer patients in this age group presented in an advanced stage.

Idiopathic pulmonary fibrosis is the commonest diffuse pulmonary lung disease in this age group followed by hypersensitivity pneumonitis.

Silicosis was the only pneumoconiosis found in this study.

Among pleural diseases infective causes like tuberculous effusion and parapneumonic effusion was the commonest followed by malignant pleural effusion and pneumothorax.

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ANNEXURE

ஆராய்ச்சி தகவல் தாள்

சென்னை அரசு பொது மருத்துவமனைக்கு வரும் முதியோர்களின் (வயது 65க்கு மேல்) நுரையீரல்களில் ஏற்படும் நோய்களின் தற்போதைய நிலை பற்றிய ஆராய்ச்சி இங்கு நடைபெற்று வருகின்றது.

முதியோர்களின் (வயது 65க்கு மேல்) நுரையீரல்களில் ஏற்படும் நோய்களின் தற்போதைய நிலையைக் கண்டறிவதே இவ்வாராய்ச்சியின் நோக்கமாகும்.

நீங்களும் இந்த ஆராய்ச்சியில் பங்கேற்க நாங்கள் விரும்புகிறோம். இந்த ஆராய்ச்சியில் பங்கேற்பதால் தங்களது நோயின் ஆய்வறிக்கையோ அல்லது சிகிச்சையோ பாதிப்புக்கு உள்ளாகாது என்பதையும் தெரிவித்துக் கொள்கிறேன்.

முடிவுகளை அல்லது கருத்துகளை வெளியிடும் போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிட மாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின் வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த சிறப்புப் பரிசோதனைகளின் முடிவுகளை ஆராய்ச்சியின்போது அல்லது ஆராய்ச்சியின் முடிவின்போது தங்களுக்கு அறிவிக்கப்படும் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம் பங்கேற்பாளர் கையொப்பம்

தேதி

ஆராய்ச்சி ஒப்புதல் கடிதம்

ஆராய்ச்சி தலைப்பு

முதியோர்களின் (வயது 65க்கு மேல்) நுரையீரல்களில் ஏற்படும் நோய்களின் தற்போதைய நிலை பற்றிய ஆய்வு

பெயர்: தேதி :

வயது: உள்நோயாளி எண் :

பால் : ஆராய்ச்சி சேர்க்கை எண்:

இந்த ஆராய்ச்சியின் விவரங்களும் அதன் நோக்கமும் முழுமையாகவும் தெளிவாகவும் எனக்கு விளக்கப்பட்டது.

எனக்கு எக்ஸ்ரே, பி.எப்.டி. சளி, இரத்தப் பரிசோதனை மற்றும் நுரையீரல் உள்நோக்கும் கருவி பரிசோதனைகள் செய்து கொள்ள சம்மதம்.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்து கொண்டு நான் எனது சம்மதத்தை தருகிறேன். மற்றும் ஆராய்ச்சியில் பங்கேற்க நான் சம்மதம் தெரிவிக்கிறேன்.

இந்த ஆராய்ச்சியில் பிறரின் நிர்ப்பந்தமின்றி என் சொந்த விருப்பத்தின் பேரில் நான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின்வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.

நான் என்னுடைய சுயநினைவுடன் மற்றும் முழு சுதந்திரத்துடன் இந்த மருத்துவ ஆராய்ச்சியில் என்னை சேர்த்துக் கொள்ள சம்மதிக்கிறேன்.

கையொப்பம்

CURRENT CLINICAL PROFILE OF RESPIRATORY DISEASES IN GERIATRIC POPULATION

PROFORMA

NAME:

AGE:

SEX:

ADDRESS:

RESPIRATORY COMPLAINTS:

- COUGH:
- SPUTUM:
- HEMOPTYSIS:
- BREATHLESSNESS:
- WHEEZE:
- CHEST PAIN
- HISTORY OF CONTACT WITH TUBERCULOSIS
- FEVER
- LOSS OF WEIGHT
- LOSS OF APPETITE
- NIGHT SWEATS
- OTHERS:

PAST HISTORY :

- HISTORY OF BA, COPD, IHD, SHT, DIABETES MELLITUS
- HISTORY OF PRIOR ATT
- OTHERS

PERSONAL HISTORY

- SMOKING
- ALCOHOL
- SLEEP
- OTHERS

OCCUPATIONAL HISTORY:

FAMILY HISTORY:

GENERAL EXAMINATION

- CONSCIOUS
- COMFORTABLE / DYSPNOEIC
- ANAEMIA
- CYANOSIS
- ICTERUS
- LYMPHADENOPATHY
- CLUBBING
- PEDAL EDEMA
- HEIGHT

- WEIGHT
- BODY MASS INDEX

VITALS

- PULSE RATE
- BLOOD PRESSURE
- RESPIRATORY RATE

SYSTEMIC EXAMINATION

INVESTIGATIONS:

CHEST SKIAGRAM

COMPLETE BLOOD COUNT

RENAL FUNCTION TEST

LIVER FUNCTION TEST

MANTOUX

SPUTUM GRAM STAIN

SPUTUM NT CULTURE AND SENSITIVITY

SPUTUM AFB

ELECTROCARDIOGRAM

ECHOCARDIOGRAM

CT CHEST

BRONCHIAL WASH

BRONCHIAL BIOPSY

PLEURAL BIOPSY

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI -3

Telephone No: 04425305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To

Dr. P. Arulkumaran
PG in MD TB & RD
Madras Medical College, Chennai -3.

Dear Dr. P. Arulkumaran

The Institutional Ethics Committee of Madras Medical College reviewed and discussed your application for approval of the proposal entitled " Current clinical profile of respiratory diseases in geriatric population" No. 34022011.

The following members of Ethics Committee were present in the meeting held on 17.02.2011 conducted at Madras Medical College, Chennai -3.

1.	Prof. S.K. Rajan, MD	– Chairperson
2.	Prof. A. Sundaram, MD Dean i/c , Madras Medical College, Chennai -3	– Member Secretary
3.	Prof R. Sathianathan Director , Institute of Psychiatry, MMC,Ch-3	– Member
4.	Prof R. Nandhini, MD Director, Institute of Pharmacology, MMC, Ch-3	– Member
5.	Prof. Pregna B. Dolia MD Director , Institute of Biochemistry, MMC, Ch-3	– Member
6.	Prof. C. Rajendiran .MD Director , Institute of Internal Medicine, MMC, Ch-3	– Member
7.	Prof. Geetha Subramanian, MD,DM Prof. & Head , Dept. of Cardiology, MMC, Ch-3	– Member
8.	Thiru. A. Ulaganathan Administrative Officer, MMC, Chennai -3	– Layperson
9.	Thiru. S. Govindasamy . BA.BL	– Lawyer
10.	Tmt. Arnold Soulina	– Social Scientist

We approve the proposal to be conducted in its presented form.

Sd /. Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information / informed consent and asks to be provided a copy of the final report

Member Secretary, Ethics Committee

ABSTRACT

Title: Current clinical Profile of Respiratory diseases in Geriatric population

Aim : To study the current trends of Respiratory diseases in Geriatric population attending a tertiary care centre.

Method : Those Geriatric patients who have respiratory symptoms will be taken up for study. All patients will be subjected to physical examination, chest skiagram, mantoux, basic blood investigations, sputum AFB, NT C/S, G.Stain, pulmonary function test, CT chest and bronchoscopy if indicated

Inclusion Criteria : Consenting patients of age >65 years with respiratory complaints

Exclusion Criteria : Patients less than 65 years of age. Patient not giving consent.

Results : Respiratory Infections and their complications, consisting of UPPER RESPIRATORY TRACT INFECTION, ACUTE BRONCHITIS, COMMUNITY ACQUIRED PNEUMONIA,

PULMONARY TUBERCULOSIS AND ITSSEQUELAE constitute the major respiratory morbidity among Geriatric population attending this tertiary care centre.Pulmonary tuberculosis is the second commonest respiratory infection and ranks fifth in overall respiratory morbidity. Sequelae of pulmonary tuberculosis cause significant respiratory morbidity in the elderly constituting about 10.3%. Pulmonary tuberculosis and its sequelae together constitute 18.96%.

COPD is the second most common respiratory morbidity without any gender difference. Active smoking is the commonest predisposing factor for COPD in males whereas it is exposure to indoor pollution in females. AECOPD is the most common cause of inpatient care.

Bronchial asthma constitutes 9.48% of the morbidity.

Carcinoma lung constitutes 7.77%. Squamous cell carcinoma is the commonest type of lung cancer among males and it is adenocarcinoma in females. Active smoking is the commonest risk factor for lung cancer in males whereas it is exposure to indoor pollutionfuel in females. Lung cancer patients in this age group presented in an advanced stage.

Idiopathic pulmonary fibrosis is the commonest diffuse pulmonary lung disease in this age group followed by hypersensitive pneumonitis.

Silicosis was the only pneumoconiosis found in this study.

Among pleural diseases infective causes like tuberculosis and parapneumonic was the commonest followed by malignancy and pneumothorax.

Conclusion

Respiratory infections including upper respiratory tract infection, acute bronchitis, pneumonia, tuberculosis constitute more than 50% of the respiratory morbidity. Followed by chronic obstructive pulmonary disease in both males as well as females. Pulmonary tuberculosis and its sequelae together almost cause one fifth of the morbidity (18.96%)**.**